"INTRODUCTION

The request of Dr. Carl C. Seltzer that I write an introduction for his paper, 'The Anthropometry of the Western and Copper Eskimos,' gives an opportunity for more or less reviewing it in advance of publication. This I do in part by reviving the hazy memories of twenty-five years ago, and then gossiping in a way that may be slightly useful to students of his work.

The anthropometric notions and tools which I carried with me into the field in 1906, when I started gathering the figures that are behind Seltzer's study, were those favored by Dr. W.C. Farrabee who was then instructor in physical anthropology at Harvard. My ethnological horizon had been largely determined by the courses that were being given by Roland B. Dixon, then instructor and now professor. The glamor of the subject and the enthusiasm with which I tackled the job of field anthropolgoy were in no small part the result of association with Frederick Ward Putnam, the head of our department. In 1903, as a student of comparative religions in the Divinity School, I had elected a beginner's course in anthropolgoy. After that for two years I was in the department of anthropology first as the holder of a fellowship and later as a fellow and assistant instructor.

The point of saying all this here is that when I started my work among the Eskimos of the Mackenzie Delta I searched for the things which my training had led me to

consider important, and used methods, among them the physical-anthropological, in which I had been instructed at the Peabody Museum of Harvard University. The instruments I used were a loan from the Museum.

I knew from conversation with Professor Franz Boas and from his pamphlet entitled 'A. J. Stone's Measurements of the Natives of the Northwest Territories' that I had had in the Mackenzie region a predecessor who measured heads and statures. Knowing this was a piece of good luck. Obviously I might discover a [314] few of the same individuals and then I could check my measurements against Stone's to give some idea of accuracy. I did ask the people around Fort Macpherson and found some whom he had measured. On these I could not get quite his results but that had little bearing on the rest of my work--I don't suppose the differences between us in figures were any greater than you would expect from different observers. What proved important was that I found (either then or later, chiefly later) that some of the people whom he lumped together as Nunatagmiut came from districts far removed from others whom he also called Nunatagmiut. Presumably they could not be in reality very near in blood if they were far in miles and separated from each other by peoples whom they at least consider not of their own kind. Stone had just measured together those whom the whalers and traders spoke of by the same name.

I could not remove from my measurements that personal equation which had made them differ from Stone's, but I could profit in other ways from our differing

circumstances. He had been a transient concerned with other business while I was, or intended to be, an anthropologist by profession and was planning to spend years at the work. I could and would make detailed inquiries as to blood ancestry, instead of bunching individuals together according to a traders' custom.

With this for my cue, I typically discovered that while a man's father was born at, say, Cape Smythe, his father had been looked upon as a member of the Oturak people, his mother, however, being from Point Hope. Still I found later that the meticulousness about fathers had problematic weight for (except as they had just recently acquired the information from whites) these Eskimos had not looked upon fatherhood at all as we do--every conception was to them miraculous and the father is merely the person to whom the mother was, according to their view married. For instance, I discovered eventually that in cases where a woman's husband died during her pregnancy the next husband was always considered the father of the child.

What I did, then, as a rule, was to trace the ancestry as carefully as possible to include all four grandparents; while in some cases, as for instance when an ancestor was known to be a non-Eskimo (say an Athabasca Indian), I would take records farther back than the grandparents.

The scope of Seltzer's studies has been such, however, that he has made no great use of these in many cases elaborate genealogical notes except to determine the group in which an individual was to be placed. Naturally, having put so much work on it, I

am hoping that a later study can be published which will make some use of this relationship material.

The geographic classifications used in my diaries and by Seltzer in this study are those of the Eskimos themselves, although we have not always gone into it quite as narrowly as they do. To take a case from home: Eskimos might distinguish between Bronx, Brooklyn, Manhattan and Queens, but that and more Seltzer lumps under New York.

Nearly always among Eskimos there is some dialectic variation to go with geographic distinctions. For instance, there were probably seldom five years when an ordinary member of the Noatak group did not see and speak to more than half of the Kuwuk group; yet, even so, a Killirk native would tell you decisively after hearing a few words, 'This man is from Noatak, that one from Kuwuk.' [315]

In many cases you would expect physical differences even when people were as nearly related by blood and geography as those of Noatak and Kuwuk--for one thing, the Kuwugmiut had more histories of intermarriage with the Athabasca Indians of the Lower Yukon; from that (pending evidence to the contrary) you expect some difference of physical type.

In general the Eskimos of northwest Alaska would agree with Seltzer in his way of affiliating certain peoples with others. I think they would disagree in one case only--where he puts the Oturkagmiut into the group that contains Point Barrow and Cape

Smythe. In their own opinion and that of their neighbors the Oturkagmiut are more nearly related to the group which includes the Noatak. However there is undeniably a great deal of intermarriage between the Oturkagmiut inlanders and the coastal people; for, of all the inlanders, the Oturkagmiut descended most frequently to the coast and stayed the longest. So the Seltzer grouping may not be far astray after all.

The same question arises with more abstruse surroundings when Seltzer divides those Copper Eskimos for whom I furnished him measurements into (1) Victoria Island, and (2) Coronation Gulf. If you have no information before you except the map, this division is unassailable. Even when you know the facts, or at least those of them that I know, you are puzzled how to find a better division--but you are a good deal worried, as may appear hereafter.

At least two of the southwest Victoria Island groups, those of Puivlirk and Noahonirk were in my time (especially at my first visit, 1910-11) in very close relation with the mainland group of Akuliakattak. However these two, but not the Akuliakattagmiut, were in close relations by intermarriage with the people to the north, those of Prince Albert Sound and Minto Inlet.

But the really significant and disturbing thing is that the Prince Albert and Minto people were travelers beyond anything known to me from the whole Eskimo world. (1)

1. See Stefansson, 1913, p. 284 ff; 1914, p. 28, 36, 37; 1921, p. 419;

cf. David T. Hanbury, 'Sport and Travel in the Northland of Canada' p. 14 (London, 1904) and various references to travel in D. Jenness 'The Copper Eskimos' (Ottawa, 1923).

They apparently enjoyed traveling but apart from that they had to have, or thought they had to have, wood of a quality beyond their local drift. Some of this they got by trade from, say, the Puivlirmiut who either fetched it themselves from the Bear Lake forest or else secured it by trade from perhaps the Kogluktogmiut. (2) But more than half of

2. Anyone interested in a more elaborate division of these Eskimos than that used by Seltzer will find it on the maps in Stefansson's 'My Life with the Eskimo,' 1913, (or, better, the abridged edition of 1929) and in Jenness' 'The Copper Eskimos,' 1923.

it they got from three or four times as far away, by first journeying east or southeast across Victoria Island and then crossing Dease Straits to the mainland and going all the way to the Baker Lake district and even farther down towards Chesterfield Inlet where they chopped down their own trees, picked up drift, or bought choice pieces from Eskimos whom they met.

Summing it up briefly, the most northerly Eskimos of Victoria Island were more

likely to intermarry with mainland people far to the south and east than with the people around the mouth of the Coppermine who in miles were only a quarter of the distance away. The people of eastern Coronation Gulf (very few of whom [316] I had a chance to measure although Jenness measured a good many of them) mixed to a considerable extent with the same remote people whom the northern Victoria Islanders used to meet near Baker Lake, but those of western Coronation Gulf were practically cut off from this chance of intermingling--except, of course, indirectly by western and eastern Gulf people marrying each other.

It is, therefore, not as surprising as it looks on the map to find resemblances between the northern Victoria Islanders and groups far away to the southeast.

For students of the Seltzer tables it may be worth keeping in mind that, while head length among Eskimos is about as easy to measure with women as with men, there is in some districts a special difficulty in securing the breadth of head of the women; for in certain localities in my time they wore their hair so that a tight twist of it came above the ears. I remember this difficulty particularly for Mackenzie River.

Students of the physical anthropology of the Eskimos should have special reservations in their minds, I feel, when they compare Greenland and Labrador with other districts. For the mixing of aboriginal blood with European began in Greenland shortly after Eric the Red, 982, and in Labrador shortly after Cabot, 1497. It may even have begun much earlier than that in Labrador in connection with the voyages which the European

Greenland colony made to secure timber, even if you do not regard what many Newfoundland historians believe, that there were fifteenth century European fishermen on the Banks and along the Labrador coast before Cabot.

Authorities who twenty years ago estimated a maximum European population in West Greenland during the Middle Ages at 3,000 have now raised it it 10,000, and the belief that this colony was exterminated by disease, war, or any other combination of causes is rapidly giving way before the view that they amalgamated with the natives, the culture disappearing but not the blood. Reduce by half the estimated European component and you still have the probability that at the time of Cabot there was as much white as Eskimo blood in the so-called Eskimos of West Greenland. The percentage has increased since then, so that it is only from Smith Sound and East Greenland that you have people whom you can reasonably compare as Eskimos with, say, Mackenzie River or Point Barrow.

Perhaps the least interesting part of the current Seltzer paper is, then, where he follows the custom of writers on Eskimo physical characters in treating West Greenlanders and Labradoreans as if they were largely if not wholly Eskimo in blood. That I think so will be no news to him when he sees this introduction, nor does he probably disagree, for (although he does not mention it in the body of his paper) he has been working for years on material that is likely to throw considerable light on blood mixture problems in Greenland. For there is in the Peabody Museum at Harvard a

collection of more than eighty skulls with a good many other bones of people who were living in Iceland at the time when the race mixture was going on in Greenland--from the eleventh to the fifteenth century. The mediaeval Europeans in Greenland practically all came from Iceland and most of them from that part of Iceland (the west coast) from which the Peabody collection is derived. It was, then, Europeans of that type who combined with Eskimos (which presumably up to this time had no European admixture) to form by their amalgamation the Greenlanders of the post-Columbian period. [317]

There is a growing body of evidence to show that Englishmen and perhaps Hollanders traded in Greenland just before Columbus, but it does not seem likely that the 'Eskimos' gained any large percentage of European blood from that source. There should be keen interest, therefore, in the Greenland angle of Seltzer's forthcoming paper on 'The Physical Anthropology of the Mediaeval Icelanders.'

The preparation of both the present study and that on the Mediaeval Icelanders was made possible through the interest taken by the Russell Sage Institute of Pathology of New York and the Institute of American Meat Packers of Chicago in the bodily characteristics of meat-eating people. At the urging of Dr. Raymond Pearl, of Johns Hopkins, and Dr. Clarence W. Lieb, of 400 Madison Avenue, New York, the Packers voted a considerable grant to a committee of distinguished scientists under the chairmanship of Dr. Pearl. Although the larger part of this money was used by the Russell Sage Institute of Pathology for re search on subjects who were living on exclusive meat diet,

there was some left over that could be given to Professor E. A. Hooton, of the Peabody Museum of Harvard University, for the study of the skeletal remains of meat eaters and for such work as that which Seltzer has done on the physical measurements of recent Eskimos.

Since I had to do with collecting both the Eskimo measurements and the Icelandic skeletal material it is my place to thank both the Russell Sage Institute of Pathology and the Institute of American Meat Packers for the broad interpretation of their research problem which enabled us to include the Seltzer studies. Not less should I, and whoever is interested in such problems, thank Professor Hooton for that continued and enthusiastic support of the project which enabled us to interest the Packers in giving the money and Seltzer in doing the work. Seltzer's own reward will be in the appreciation of those of us who have been associated with him and in the satisfaction of having contributed substantially to a field hitherto little cultivated, that of the physical anthropology of the Western and Copper Eskimos.

VILHJALMUR STEFANSSON."

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"THE DATA

Vilhjalmur Stefansson made three polar expeditions. He made his first trip as ethnologist of the Leffingwell-Mikkelsen Arctic Expedition 1906-07, (3) the second in

3. Stefansson, 1922.

1908-12 as leader of the Stefansson-Anderson Expedition, (4) the third as Commander of

4. Stefansson, 1913. 1914.

the Canadian Arctic Expedition 1913-18. (5) It was during the first two trips that he was

5. Stefansson, 1921.

able to take anthropometric measurements on the various Eskimo groups he encountered. The first expedition of 1906-07 was spent mainly among the Eskimos of the Mackenzie delta, although he went as far west as the Colville; on the second visit, 1908-12, Stefansson travelled as far west as Kotzebue Sound and as far east as the Coronation Gulf."

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"Measurements were taken on adult males and females (18-60 years of age) and on sub-adult males and females (3-17 years of age) as follows:

Head length (maximum glabello-occipital length)
Head breadth (maximum biparietal breadth)
Face height (mention-nasion height) (6)

6. Stefansson measured face height from glabella to menton, but a correction has been applied to make face height read from nasion to menton. For correction see Connolly, 1926.

Face breadth (maximum bizygomatic diameter)
Stature
Sitting height (sitting height to vertex)

From the above measurements the following indices were calculated:

Cephalic index (ratio of head breadth to head length)
Facial index (ratio of face height to face breadth)
Cephalo-facial index (ratio of face breadth to head breadth)
Relative sitting height (ratio of sitting height to stature)"

9: Seltzer--319-322 (no date) 1933 Copper Eskimo-1-5
116, 141

"As stated above, measurements were taken on various groups of Eskimos from Kotzebue Sound as far east as Coronation Gulf. It would be futile and profitless to attempt a survey of each tribe separately inasmuch as certain tribes obviously belong together, due to their blood affiliations and constant contact with each other. Therefore, Stefansson, on the basis of his knowledge of t[illegible] relationships, has divided them into the following groups.

(I) Kotzebue Sound. Includes all those groups on the Alaskan coast from Cape Prince of Wales to and including Point Hope.

(2) Barrow. Includes all those groups along the coast north of Point Hope district to and including the region around Point Barrow.

(3) Nunatagmiut. Includes all the groups residing along the Colville Basin, as the Nunatagmiut proper, the Noatagmiut, etc.; also the Eskimos on the mid-eastern Alaskan coast near or at the delta of the Colville River.

(4) Mackenzie. Includes all tribes along the northern Canadian coast in the region of the Mackenzie delta from Herschel Island east to Cape Parry.

(5) Victoria Island. Includes the Prince Albert Sound people and the Haneragmiut on southwestern Victoria Island.

(6) Coronation Gulf. Includes all tribes living in and around Coronation Gulf.

9: Setlzer--319-322 (no date) 1933 Copper Eskimo-2
116, 141

"Kotzebue Sound Eskimos

This group consists of 30 adult males and 8 adult females who are members of tribes along Kotzebue Sound from Cape Prince of Wales to Point Hope. The following tribes are represented in this division, Kivalina, Selawik, Tapkak, Kangianik, Kittegarmiut, Kigirktaruk, Port Clarence, Cape York, and Cape Prince of Wales.

Barrow Eskimos

All the individuals in this classification belong to the tribes that reside along the Alaskan coast from Icy Cape to Point Barrow. Here [320 contains a chart] [321] were measured 85 adult males and 28 adult females. The tribes in this district are the Kugmiut, Nuvugmiut, Utkiavigmiut, Oturkagmiut, (7) etc. These people live mainly at

7. The Oturkagmiut have been included in the Barrow group because although they have some Nunatagmiut blood, those measured by Stefansson show closer affiliations with the coastal peoples.

Point Barrow, Cape Smythe, Wainwright and Smith Bay. The Oturkagmiut are considered

to live inland from Icy Cape.

Nunatagmiut Eskimos

The Nunatagmiut group contains 72 adult males and 55 adult females. This includes most of the tribes living in the Colville valley, along the Colville River and tributaries and at Colville delta. The tribes are the Nunatagmiut proper, Noatagmiut, Kuvugmiut, Kangianirmiut, Killirmiut, Kagmallirmiut. These people were measured chiefly on or near the Colville, at Barrow (Cape Smythe) and Point Barrow when they came down to the coast for the whaling season, and at Herschel Island in the east where they journeyed to meet the whaling vessels in order to obtain supplies and employment on the ships.

Mackenzie Eskimos

The Mackenzie Eskimos extend along the mouth and delta of the Mackenzie River from Herschel Island to Cape Parry. Here Stefansson measured 48 adult males and 40 adult females at Stokes Point, Baillie Islands, Kangianik, Booth Islands, Tuktuyaktok and Imnaluk belonging to the Kupugmiut, Kittegaryumiut, Kigirktagmiut, and

Avvagmiut tribes.

Victoria Island Eskimos

The Victoria Islanders in this series are those tribes that occupy the southwestern end of Victoria Island and include the Kanghiryutsiagmiut around Minto Inlet, the Kanghiryuarmiut who inhabit Prince Albert Sound, and the Haneragmiut (8) who live near

8. The Haneragmiut are know to have mixed a good deal with the Coronation Gulf Eskimos.

Cape Kendall, southeast of Ikpigyuak Cape. This group consists of 30 adult males and 19 adult females.

Coronation Gulf Eskimos

During 1910-11 Stefansson measured 65 adult males and 46 adult females affiliated with the Akuliakuttagmiut, Puiplirmiut, Noahonirmiut, [322] Pallirmiut,

9: Seltzer--319-322 (no date) 1933 Copper Eskimo-5
116, 141

Kogluktogmiut, Nagyuktogmiut, and Utkusiksaligmiut tribes. This group was studied again a few years later by Jenness whose report may be found in the reports of the Canadian Arctic Expedition 1913-18."

9: Seltzer--320
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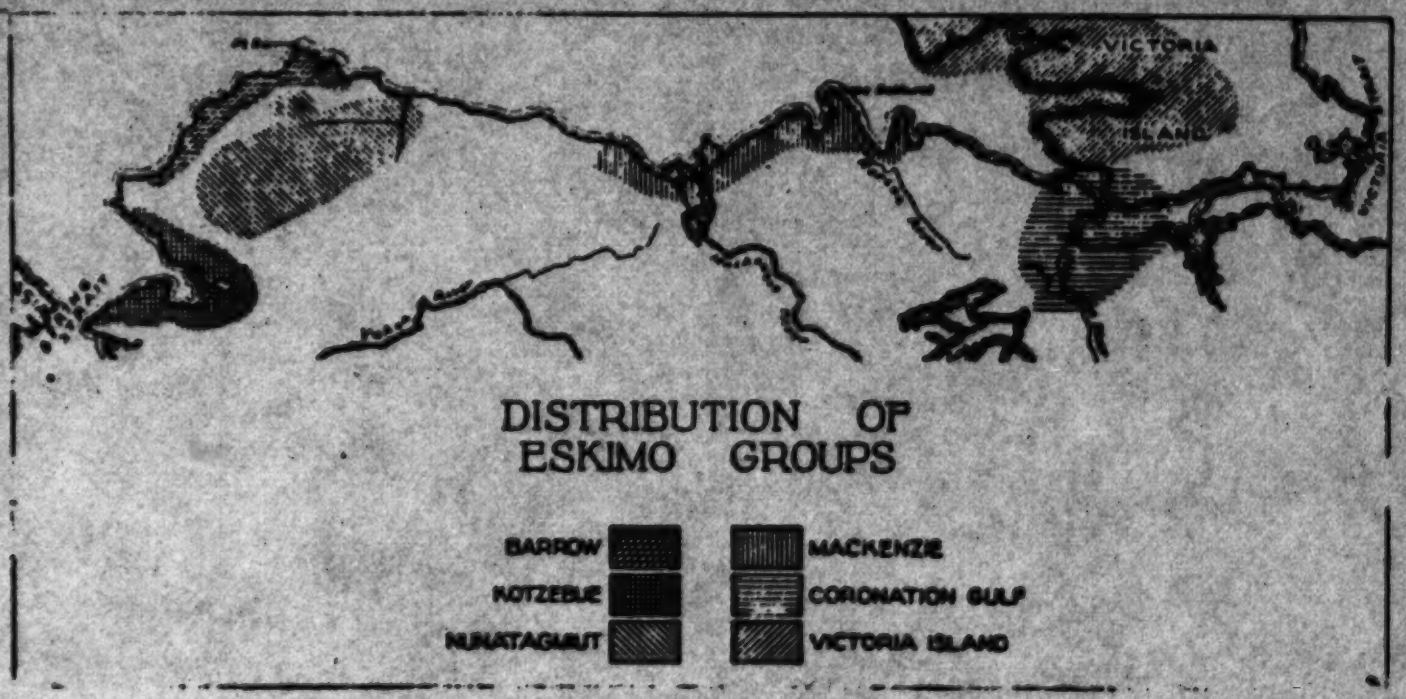
(no date) 1933

Copper Eskimo



9: Seltzer--322 (no date) 1933 Copper Eskimo
116, 141

"TABLE I
Head Length

	No.	RANGE	S.D.	MEAN	C.V.*
Males:					
Kotzebue Sound . .	30	185-211	192.50±0.72	5.83±0.51	3.03 ± 0.26
Barrow.	62	179-210	192.39±0.54	6.39±0.38	3.32 ± 0.20
Nunatagmiut. . .	64	180-199	190.03± 0.40	4.78±0.28	2.52 ± 0.15
Mackenzie	47	185-212	196.26± 0.56	5.71±0.40	2.91 ± 0.20
Victoria Island . .	30	185-206	194.13± 0.58	4.73±0.41	2.44 ± 0.21
Coronation Gulf .	65	182-211	195.71± 0.47	5.58±0.33	2.85 ± 0.17
Females:					
Kotzebue Sound. .	8	183-189	185.00± 0.45	1.87±0.33	1.01 ± 0.17
Barrow	26	176-194	184.88± 0.61	4.65±0.43	2.52 ± 0.24
Nunatagmiut . . .	55	173-197	182.91± 0.43	4.72±0.30	2.58 ± 0.17
Mackenzie	40	178-198	186.90± 0.60	5.58±0.42	2.99 ± 0.23
Victoria Island. .	19	172-200	186.74±1.06	6.82±0.75	3.65 ± 0.40
Coronation Gulf .	46	179-201	188.70± 0.47	4.72±0.33	2.50 ± 0.18

* The probable errors of the means, standard deviations and coefficients of variation, have been calculated with the aid of Pearson's tables of χ_1 χ_2. See Pearson, 1914."

9: Seltzer--322-344 (no date) 1933 Copper Eskimo -1-13
116, 141

"Table I contains the mean head lengths of the males and females of our Eskimo groups. The most striking feature among the males is the remarkable length of the heads of the Mackenzie Eskimos, who have a mean diameter of 196.26 mm. The Coronation Gulf group shows the next longest head length, while the Nunatagmiut have the shortest of all, 190.03 mm., a fact which no doubt betrays some mixture in modern and in recent prehistoric time with the Athapaskans to the south. The Kotzebue Sound and Barrow males have mean head lengths that are very similar. Another interesting point is that the more isolated and northern Victoria Islanders, who are geographically farther away from [p. 323 contains a chart] [324] possible Indian admixture show shorter mean head lengths than their southern Coronation Gulf neighbors. (9)

9. Note by Stefansson: It is chiefly on an uninterpreted map that the more northerly people seem more isolated. The reports of Hanbury, Stefansson and Jenness (taken in chronological order) show that the more northerly Victoria Islanders made frequent journeys to the Baker Lake and Chesterfield Inlet district and had opportunity of blood mixing with the southerly and southeasterly groups from Kent Peninsula to Hudson Bay. (Hanbury, David T. Sport and Travel in the Northland of Canada, p. 14. For evidence as to what Eskimos Hanbury met, see Stefansson, 1913, p. 285;

Stefansson, 1914, pp. 28, 36, 37; Stefansson, 1921, p. 419. See also Jenness, 1923, p. 48.)

Among the females, although the Mackenzie have fairly long heads, they are exceeded in this character by the Coronation Gulf women. The Victoria Islanders again have a shorter mean head length than the Coronation Gulf group. The Nunatagmiut females, as expected, exhibit the shortest mean head length of 182.91 mm., while the Barrow and Kotzebue Sound women are similar to each other as are the men.

The Mackenzie males in this feature too, differ markedly from any of the other Eskimo groups, having the narrowest mean head breadth of 146.68 mm. The mean next in size is that of the Coronation Gulfers which is 4.41 mm. wider. The Nunatagmiut again show their Athapaskan taint in having the broadest heads with a mean of 154.48 mm. The Kotzebue Sound and Barrow males are similar in head breadth as [p. 325 contains a chart] [326] in head length, while the Victoria Islanders are 0.74 mm. broader headed than the more southern Coronation Gulf men.

The females show the same general tendencies as do the males, the Mackenzie being by far the narrowest and the Nunatagmiut the broadest. The Victoria Island women follow the men in having a greater mean head breadth than the Coronation Gulf group.

In this table I have listed the mean cephalic indices of the male and female Eskimos. From the previous studies in head length and head breadth it is no surprise to find that

the Mackenzie males show the lowest mean cephalic index 74.75, this figure being 2.51 index units lower than the next highest group, the Coronation Gulfers.

The Mackenzie are the only mean dolichocephalic group of all the Eskimos, for the rest have mesocephalic indices, including the Nunatagmiut who are practically brachycephalic with an index of 81.39.

The Kotzebue Sound and Barrow males have almost identical mean indices, while that of the Victoria Islanders, although quite similar to the afore-mentioned groups, is 1.04 index units higher than the Coronation Gulf mean.

A study of the female cephalic indices substantiates the facts observed among the males. Here too the lowest cephalic index is that of the Mackenzie women. The Nunatagmiut possess the highest mean index of 81.18, bordering on brachycephaly. [327]

The Coronation Gulf mean is 1.55 units lower than that of the Victoria Island females. The 26 Barrow women have a cephalic index of 78.12 in contrast to the 77.00 mean index of the Kotzebue females. This difference may be due to the small number of individuals in the Kotzebue sample, although the standard deviation of 2.12 is fairly small.

It must not pass unnoticed that, with the exception of the Mackenzie, all the female groups have lower mean cephalic indices than the corresponding males.

Table 6 shows the grouping of all the Eskimos according to the divisions of the cephalic index. This statistical device has the advantage over the mean in that it distinguishes the various types of head form which are present in the group.

Among the males, the Kotzebue Sounders evidence a marked mesocephaly having 60.0 per cent of the individuals in this class, associated with fairly good size dolichocephalic and brachycephalic elements. The Barrow males have division percentages quite similar to those of their Kotzebue neighbors, except that they possess a larger brachycephalic class, which is doubtless due to Nunatagmiut admixture when the latter group came down to the coast in the whaling seasons. [p. 328 contains a chart] [329]

The Nunatagmiut males are composed of two types, mesocephals and brachycephals, with about equal numbers in each classification. Of the 64 Nunatagmiut males there is only one individual who lays claim to dolichocephaly.

The Mackenzie males stand apart from all of the other groups in head form, 79.2 per cent of their number showing dolichocephaly, with only 18.7 per cent mesocephalic. This indeed emphasizes the distinctiveness of the Mackenzie Eskimo, for none of our other groups can compare with them in extreme length and narrowness of the cranial vault.

The Victoria Islanders and Coronation Gulf men show similarity in the percentage of individuals in the various classes, with the latter having a slightly greater tendency towards dolichocephaly.

The female Kotzebue and Barrow Eskimos approximate the male condition, with the exception of an absence of roundheads among the former.

The Nunatagmiut women show almost identical percentages with the males; and the Mackenzie, although they do not have as many dolichocephals as the men, exceed any

of the other female groups in this characteristic.

The only marked divergence from the male results is found among the Coronation Gulf women, whose population is composed of almost equal numbers of dolichocephals and mesocephals. [p. 330 contains a chart] [331]

This table gives the mean face heights of our six Eskimo groups. The shortest average a little above 125 mm. and are found among the Mackenzie and Victoria Island males. The Barrow men have the longest faces, showing an exceptionally high mean face height of 129.63 mm. The remaining groups, the Kotzebue, Nunatagmiut and Coronation Gulfers, all have means ranging around 127 mm.

The Eskimo women do not correspond to their respective male groups in mean face height, for although the Mackenzie females exhibit the shortest faces of all, the Victoria Islanders and Coronation Gulf women have the longest. Face height has been the only characteristic thus far studied wherein the females have not supported most of the differences found among the males.

On the basis of previous evidence we would expect to find the Nunatagmiut far exceeding all the other Eskimos in breadth of face. But strangely enough this is not so, for while the Nunatagmiut males have a mean face breadth of 147.05 mm. identical with the mean of the Coronation Gulfers, they are surpassed by the Kotzebue Sound men with a face breadth of 148.37 and the Victoria Islanders with 147.80. Unquestionably our Nunatagmiut group is composed of a narrower-headed leptoprosopic element as well as a

brachycephalic broader-faced element as evidenced in part by the high standard deviation of 7.33 and the coefficient of variation of 4.98. [p. 332 contains a chart] [333]

The Mackenzie Eskimos have the narrowest faces with a mean breadth of 144.70 mm., while the Barrow males are only 0.99 mm. broader.

The Nunatagmiut females are similar to the Victoria Islanders in mean face breadth as are the men, and again, are exceeded in this feature by the Kotzebue Sound women. Although the Mackenzie have comparatively narrow faces, they are nevertheless slightly broader than those of the Barrow and Coronation Gulf females.

Our Eskimos show a remarkable degree of variation in mean facial index, ranging from almost euryprosopism among the Victoria Islanders to distinct leptoprosopism among the Barrow males. The low index of 84.83 for the Victoria Islanders is due to their relatively short face heights, rather than to the breadth of their faces.

Although the Mackenzie men resemble the Kotzebue, Nunatagmiut and Coronation Gulfers in mean facial index, it must be remembered that they differ in having absolutely shorter and narrower faces.

Notwithstanding the fact that the Kotzebue Sound and Mackenzie females both have low indices bordering on euryprosopism, on examination we find that they are not due to similar factors, for, while the low index of the Mackenzie is the result of their short faces, the index of the Kotzebue Sound women may be traced to the excessive breadth of their faces rather than the height. [334]

The highest mean facial index among the females is that of the Coronation Gulfers, 88.27, with the Victoria Island and Barrow women having indices about 2 units lower.

In Table 12 we noticed that the Victoria Island males possessed the lowest mean facial index of all the groups. In this table when all the individuals are classified on the basis of the facial index divisions, we find that this fact is substantiated, for the Victoria Islanders have, as do the Kotzebue Sound males, 33.3 per cent euryprosopic faces. This relationship between the two groups ends here, for the rest of the Victoria Islanders are mainly mesoprosopic while the remaining Kotzebue Sound males are distinctly leptoprosopic.

The Barrow men have a mean facial index of 89.00, the highest of all the groups, more than half of their number being leptoprosopic and only 17.7 per cent euryprosopic.

The Nunatagmiut males show a fair number of short-broad faced individuals, a moderate amount of mesoprosopists, and a still greater number of long and narrow faced types. The Mackenzie males and Coronation Gulfers are similar to the Nunatagmiut in divisions of the facial index as well as in mean facial index, except that the Mackenzie are not as long faced as the other two groups. [p. 335 contains a chart] [336]

It is interesting to note that in the main, all the male groups are predominantly leptoprosopic, with the exception of the Victoria Islanders who possess a greater percentage of mesoprosopic than leptoprosopic faces.

At the first cursory glance at the females, it is evident that they are not as long and narrow faced as the males, for the Mackenzie and Kotzebue females are more euryprosopic than leptoprosopic. The Coronation Gulf, Victoria Island, and Barrow women are the most leptoprosopic groups among the females.

Cephalo-facial index, the relation between breadth of face and breadth of head, becomes a very important index when we are dealing with Eskimo or Indian material. In respect to the latter it has been found that the pure-blooded American Indians usually have mean cephalo-facial indices ranging from about 94 to 98. It has also been demonstrated by Jenks (10) and Sullivan, (11) that when Indians absorb some white blood the

10. Jenks, 1916.

11. Sullivan, 1920.

first evidence of their mixture is portrayed by the cephalo-facial index which drops below 94 and sometimes as low as 89. In Indian and white mixtures, the index falls, due to the decrease in diameters, the decrease in face breadth exceeding the decrease in head breadth.

The pure-blooded male Eskimos have mean cephalo-facial indices that are higher than those of the Indians, varying from approximately 96 to 100. It appears that when

Indian blood enters the Eskimo groups, the mean cephalo-facial index falls, but rarely below 95. Thus, in Eskimo and Indian mixtures, the index falls, due to the increase in diameters, the increase in cranial breadth exceeding the increase in facial breadth. When we discover Eskimo groups with mean cephalo-facial indices below 95, we can be quite sure we are dealing with an appreciable amount of white mixture, especially if we can demonstrate that it is due to a decrease in diameters, for, in Eskimo and white mixtures, the index falls as a result of a decrease in diameters, the decrease in facial breadth exceeding the decrease in cranial width.

With these facts in mind, we find on examination of Table 15 that none of our male groups show any evidence of white blood, but that the Nunatagmiut unquestionably betray their Athapaskan admixture in the comparatively low cephalo-facial index of 95.27. The most eskimoid group, the Mackenzie, possess the highest mean index, 98.98, while the remaining groups have face breadths that are a little more than 97 per cent of the breadth of their heads, with the exception of the Barrow who show an index of 96.48.

The 7 Kotzebue Sound females have a very high mean cephalo-facial index of 100.14, but this is probably due to the small size of the series and must therefore not be considered seriously. The Mackenzie women exceed the rest of the female groups with a mean index of 98.41, and again the Nunatagmiut have the lowest index, 95.09, followed closely by the Barrow whose mean index is only 0.47 index units higher.

If we accept the proposition that the great size of face breadth relative to head breadth is an index of the purity of Eskimo blood, then we must admit that the Mackenzie Eskimos are the purest Eskimos of all. It would also follow that the Nunatagmiut have had a great deal of Indian admixture in comparatively recent times. The intermediate position of the Kotzebue Sounders, Victoria Islanders and Coronation Gulfers gives the possibility of some degree of Indian admixture, but this supposition may best be left for further elaboration later.

In this table I have sorted all the individuals on the basis of a two-fold classification, each one being classified both as to his cephalic index and facial index. Thus, all the dolichocephalic types may be either dolicho-eurprosopic, dolicho-mesoprosopic, or dolicho-leptoprosopic. [pp. 338-339 contain charts] [340] The mesocephals and brachycephals are also divided in this fashion, so that every individual must fall into one of our 9 groups.

In examining the males, we find that the Kotzebue Sound group consists mainly of dolicho-leptoprosopic, meso-euryprosopic and meso-leptoprosopic types. The Barrow dolichos are leptoprosopic and the mesocephals are also long and narrow faced. The surprising fact about the Nunatagmiut group is that along with the meso and brachy types, we find a very small percentage of euryprosopism, for the mesocephals are mostly leptoprosopic while the brachycephals are markedly mesoprosopic and leptoprosopic.

9: Seltzer--322-344 (no date) 1933 Copper Eskimo-11
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The Victoria Islanders are excessively mesocephalic and have faces that are eury-prosopic and mesoprosopic, while the Coronation Gulfers differ from them in having 33.9 per cent meso-leptoprosopic individuals.

The small size of the Kotzebue female series prevents us from arriving at any definite conclusions as to the associations of facial with cranial types; but among the Barrow women, the dolichocephals are notably leptoprosopic with the mesocephals having all types of faces. The Nunatagmiut females are predominately meso-leptoprosopic and brachy-euryprosopic. The Mackenzie dolichocephals and mesocephals show very few mesoprosopic faces but seem to run more to the extreme types.

The Victoria Islanders differ again from their southern Coronation Gulf neighbors, the former being in the main meso-mesoprosopic and meso-leptoprosopic, while the latter are excessively dolicho-leptoprosopic with a fair amount of meso-leptoprosopism.

It was indeed unfortunate that Stefansson was unable to obtain stature and sitting height measurements on more individuals and on [p. 341 contains a chart] [342] more Eskimo groups; yet, we must accept with ready hands all the evidence we can possibly obtain in order to help piece together the fragmentary evidence bearing upon Eskimo history.

The Nunatagmiut and Mackenzie males present the tallest mean statures that have heretofore been assigned to any Eskimo group. A mean stature approximating 169 cm.

places these Eskimos in what Martin (12) calls the 'Mittelgrosse Gruppen.' The Barrow

12. Martin, 1928.

men with a mean stature of 164.59 are far shorter than their more eastern relatives.

The females support the males in this characteristic with the Mackenzie and Nunatagmiut women being taller than the Barrow group.

In this instance, due to the absence of measurements on the lower extremities, sitting height becomes a very important measurement, for it indicates whether the magnitude of the stature lies in the torso or the lower limbs.

Curiously enough the tallest group, the male Nunatagmiut, have the shortest mean sitting height, which is smaller than that of the lower statured Barrow Eskimos. The Mackenzie males with a stature not quite as great as the Nunatagmiut have the largest mean sitting height of 91.20 cm. Evidently the tall stature of the Nunatagmiut group lies in the lower limbs, while that of the Mackenzie is inherent in the torso or vertebral column and head. [p. 343 contains a chart] [344]

Relative sitting height is an index which gives the ratio of sitting height to stature. The higher the index the greater is the length of the torso in relation to the total stature of the individual.

Therefore, the Nunatagmiut males and females have longer legs or shorter bodies

relative to their statures than either the Mackenzie or Barrow groups. The Barrow males and Mackenzie females have relatively the longest bodies or the shortest legs."

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"TABLE 2

Comparative Table of Mean Head Length

GROUP	AUTHORITY	MALES		FEMALES	
		No.	Mean	No.	Mean
East Greenland	Hansen (1893)	..	192.0	..	187.0
Angmassalik (E. Greenland)	Poulsen (1909)	26	192.27	10	183.50
Smith Sound	Steensby (1910)	8	196.25	10	187.6
Labrador	Pittard (1901)	8	196.00	6	192.66
Labrador	Duckworth and Pain (1900)	11	191.15	10	190.35
Labrador	Virchow (1880)	3	197.3	2	190.5
Baffin Island	Oettking (1931)	10	197.6	13	190.4
Southampton Island	Tocher (1902)	35	192.4	..	.....
Hudson Bay	Birket-Smith (1925)	99	193.7	..	.....
Coronation Gulf	Author	65	195.71	46	188.70
Coronation Gulf	Jenness (1923)	82	195.9	42	190.6
Victoria Island	Author	30	194.13	18	188.74
Mackenzie	Author	47	196.26	40	188.90
Mackenzie	Jenness (1923)	4	196.8	..	.....
Mackenzie (Koupagmiut)	Boas (1901)	12	195.2	6	187.8
Nuntagmiut	Author	64	190.03	55	182.91
Nuntagmiut	Boas (1901)*	11	189.0	5	181.0
Barrow	Author	62	192.39	26	184.58
Point Hope	Jenness (1923)	13	192.8	..	.....
Kotzebue Sound	Author	30	192.50	8	185.00
Seward Peninsula	Shapiro (1931)	40	196.3	..	.....
St. Lawrence Island	Hrdlička (1930)	63	193.3	48	185.6
Southwest Alaska	Hrdlička (1930)	61	192.9	24	188.5
Asiatic Eskimo	Jochelson-Brodsky (1908)	80	189.8	80	184.5

*Note by Stefansson: At the time of the Stone-Boas measurements the word 'Noontama'as used near the Mackenzie where Stone did measuring, meant: Any Eskimo from the American mainland farther west than Herschel Island. A Stone-Boas Nunatagmiut might therefore belong to any of a dozen Seltzer 'tribes'—to any of his divisions west of Herschel. Most of these were probably from Port Clarence, Cape Prince of Wales, or from the Kuvuk and Noatak rivers."

"TABLE 3
Head Breadth

	No.	RANGE	MEAN	S.D.	C.V.
Males.					
Kotzebue Sound	30	137-168	151.60±0.77	6.24±0.54	4.12±0.36
Barrow	62	136-166	151.11±0.49	5.71±0.35	3.78±0.23
Nunatagmiut	64	139-163	154.48±0.39	4.57±0.27	2.96±0.18
Mackenzie	47	138-157	146.68±0.41	4.19±0.29	2.86±0.20
Victoria Island	30	143-160	151.83±0.48	3.87±0.34	2.55±0.22
Coronation Gulf	65	142-160	151.09±0.36	4.32±0.26	2.86±0.17
Females:					
Kotzebue Sound	8	133-146	142.50±0.92	3.84±0.65	2.69±0.45
Barrow	26	138-153	144.54±0.51	3.87±0.36	2.68±0.25
Nunatagmiut	55	138-156	148.46±0.39	4.31±0.28	2.90±0.19
Mackenzie	40	131-153	140.90±0.37	4.49±0.34	3.19±0.24
Victoria Island	19	135-152	145.37±0.69	4.44±0.49	3.05±0.33
Coronation Gulf	46	135-153	143.87±0.40	4.05±0.28	2.82±0.20"

"TABLE 4
Comparative Table of Mean Head Breadth

GROUP	AUTHORITY	MALES No.	MALES Mean	FEMALES No.	FEMALES Mean
East Greenland	Hansen	..	147.0	..	141.0
Angmassalik (E. Greenland)	Poulsen	26	147.08	10	139.90
Smith Sound	Steensby	8	152.75	10	144.90
Labrador	Pittard	8	148.37	6	144.17
Labrador	Duckworth and Pain	11	147.65	10	141.80
Labrador	Virchow	3	149.0	2	137.0
Baffin Island	Oetteking	10	150.1	13	147.9
Southampton Island	Tocher	35	148.5	..	.....
Hudson Bay	Birket-Smith	99	149.7	..	.....
Coronation Gulf	Author	65	151.09	46	143.87
Coronation Gulf	Jenness	82	151.8	42	145.8
Victoria Island	Author	30	151.83	19	145.37
Mackenzie	Author	47	148.68	40	140.90
Mackenzie	Jenness	4	149.8	..	.....
Mackenzie (Koupagmiut)	Boas	12	144.0	6	141.5
Nunatagmiut	Author	64	154.48	55	148.46
Nunatagmiut	Boas	11	154.5	5	142.6
Barrow	Author	62	151.11	26	144.54
Point Hope	Jenness	13	150.6	..	.....
Kotzebue Sound	Author	30	151.60	8	142.50
Seward Peninsula	Shapiro	40	152.2	..	.....
St. Lawrence Island	Hrdlicka	63	154.0	48	147.7
Southwest Alaska	Hrdlicka	61	155.6	24	150.0
Asiatic Eskimo	Jochelson-Brodsky	60	153.0	80	146.8"

9: Seltzer--326 (no date) 1933 Copper Eskimo
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"TABLE 5
Cephalic Index

	No.	RANGE	MEAN	S.D.	C.V.
Males:					
Kotzebue Sound	30	73-87	78.60±0.47	3.82±0.33	4.86±0.42
Barrow	62	73-87	78.55±0.28	3.22±0.20	4.10±0.25
Nunatagmiut	64	76-89	81.39±0.25	2.94±0.18	3.61±0.22
Mackenzie	48	68-82	74.75±0.26	2.65±0.18	3.55±0.24
Victoria Island	30	75-82	78.30±0.24	1.95±0.17	2.49±0.22
Coronation Gulf	65	69-82	77.26±0.20	2.44±0.14	3.16±0.19
Females:					
Kotzebue Sound	8	72-79	77.00±0.51	2.12±0.36	2.75±0.46
Barrow	26	73-83	78.12±0.36	2.75±0.26	3.52±0.33
Nunatagmiut	55	76-88	81.18±0.28	3.08±0.20	3.79±0.24
Mackenzie	40	70-82	75.38±0.28	2.65±0.20	3.52±0.27
Victoria Island	19	74-84	77.79±0.36	2.35±0.26	3.02±0.33"
Coronation Gulf	46	73-80	76.24±0.17	1.67±0.12	2.19±0.15

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" TABLE 6
Divisions of the Cephalic Index

	DOLICHO-CEPHALIC (x-76.9)		MESO-CEPHALIC (77-81.9)		BRACHY-CEPHALIC (82-x)		TOTAL	
	No.	%	No.	%	No.	%	No.	%
Males:								
Kotzebue Sound	8	26.7	18	60.0	4	13.3	30	100
Barrow	16	25.8	33	53.2	13	21.0	62	100
Nunatagamiut	1	1.6	33	51.5	30	46.9	64	100
Mackenzie	38	79.2	9	18.7	1	2.1	48	100
Victoria Island	6	20.0	22	73.3	2	6.7	30	100
Coronation Gulf	18	27.7	46	70.8	1	1.5	65	100
Females:								
Kotzebue Sound	2	25.0	6	75.0	0	0	8	100
Barrow	6	23.1	16	61.5	4	15.4	26	100
Nunatagmiut	2	3.6	28	50.9	25	45.5	55	100
Mackenzie	26	65.0	13	32.5	1	2.5	40	100
Victoria Island	4	21.0	14	73.7	1	5.3	19	100
Coronation Gulf	24	52.2	22	47.8	0	0	46	100"

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Comparative Table of Mean Cephalic Index

GROUP	AUTHORITY	MALES No.	MALES Mean	FEMALES No.	FEMALES Mean
East Greenland	Hansen	..	76.9	..	75.2
Angmassalik (E. Greenland)	Hansen (1914)	31	77.8	15	76.5
Angmassalik (E. Greenland)	Poulsen	28	76.52	10	76.29
Southeast Greenland	Hansen (1914)	22	75.7	21	75.0
Southwest Greenland	Hansen (1914)	21	78.1	14	76.8
Greenland	Deniker (1913)	814	76.8	..	.....
Smith Sound	Steensby	8	78.06	10	77.40
Labrador	Pittard	8	76.11	6	74.84
Labrador	Duckworth and Pain	11	77.0	5	74.5
Labrador	Virchow	3	75.5	2	73.0
Baffin Island	Oetteking	10	76.2	13	77.7
Southampton Island	Tocher	35	77.2	..	.....
Hudson Bay	Birket-Smith	99	77.3	..	.....
Coronation Gulf	Author	65	77.26	46	76.24
Coronation Gulf	Jenness	82	77.6	42	76.7
Victoria Island	Author	30	78.30	19	77.79
Mackenzie	Author	48	74.75	40	75.38
Mackenzie	Jenness	4	76.1	..	.....
Mackenzie (Koupagmiut)	Boas	12	73.9	6	75.2
Nuntagmiut	Author	64	81.39	55	81.18
Nuntagmiut	Boas	11	81.6	5	78.8
Barrow	Author	62	78.55	26	78.13
Point Hope	Jenness	13	78.3	..	.....
Kotzebue Sound	Author	30	78.60	8	77.0
Seward Peninsula	Shapiro	40	77.96	..	.....
St. Lawrence Island	Hrdlička	63	79.7	48	79.6
Southwest Alaska	Hrdlička	61	80.7	34	79.6
Alaska	Boas (1895)	114	79.2	..	.....
Asiatic Eskimo	Jochelson-Brodsky	60	80.3	80	79.7

9; Seltzer--329 (no date) 1933 Copper Eskimo
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"TABLE 8
Face Height

	No.	RANGE	MEAN	S.D.	C.V.
Males:					
Kotzebue Sound	30	112-140	127.73±0.56	6.55±0.57	5.13±0.45
Barrow	62	116-149	129.63±0.67	7.79±0.47	6.01±0.36
Nunatagmiut	64	102-142	127.06±0.63	7.49±0.45	5.89±0.35
Mackenzie	47	109-140	125.57±0.71	7.18±0.50	5.72±0.40
Victoria Island	30	112-140	125.20±0.81	6.56±0.57	5.22±0.46
Coronation Gulf	65	111-146	127.72±0.55	6.56±0.39	5.14±0.30
Females:					
Kotzebue Sound	8	107-128	119.25±1.91	7.99±1.01	6.70±1.13
Barrow	25	98-130	119.40±1.01	7.49±0.71	6.27±0.60
Nunatagmiut	53	101-129	120.38±0.60	6.56±0.43	5.45±0.35
Mackenzie	40	96-133	117.08±0.82	7.67±0.58	6.55±0.49
Victoria Island	19	112-135	121.68±0.80	5.16±0.56	4.24±0.46
Coronation Gulf	45	110-140	121.73±0.70	6.99±0.50	5.74±0.41

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TABLE 9
Comparative Table of Mean Face Height

GROUP	AUTHORITY	MALES		FEMALES	
		No.	Mean	No.	Mean
Smith Sound	Steensby	8	125.25	10	118.30
Labrador	Duckworth and Pain	11	127.0	10	118.5
Labrador	Virchow	3	127.7	2	119.0
Hudson Bay	Birket-Smith	99	123.5	..	.....
Coronation Gulf	Author	65	127.72	33	121.73
Coronation Gulf	Jenness	83	129.9	43	121.7
Victoria Island	Author	30	128.20	19	121.68
Mackenzie	Author	47	125.57	40	117.68
Mackenzie (Koupagmiut)	Boas	12	131.5	6	120.8
Nunatagmiut	Author	64	127.09	33	120.38
Nunatagmiut	Boas	11	128.4	6	119.8
Barrow	Author	63	129.63	28	119.40
Kotzebue Sound	Author	30	127.73	8	119.38
Seward Peninsula	Shapiro	40	126.9	..	.....
St. Lawrence Island	Hrdlicka	63	126.8	48	113.1
Southwest Alaska	Hrdlicka	61	126.7	24	121.1
Asiatic Eskimo	Jochelson-Brodsky	90	131.07	..	125.04

" TABLE 10
Face Breadth

	No.	RANGE	MEAN	S.D.	C.V.
Males:					
Kotzebue Sound	30	139-157	148.37±0.61	4.93±0.43	3.32±0.29
Barrow	62	132-158	145.69±0.55	6.45±0.39	4.43±0.27
Nunatagmiut	64	127-162	147.05±0.62	7.33±0.44	4.98±0.30
Mackenzie	47	123-157	144.70±0.60	6.09±0.42	4.21±0.29
Victoria Island	30	134-158	147.80±0.66	5.34±0.46	3.61±0.31
Coronation Gulf	65	138-157	147.05±0.39	4.64±0.27	3.16±0.19
Females:					
Kotzebue Sound	7	140-148	142.86±0.72	2.83±0.51	1.98±0.36
Barrow	25	128-153	138.16±0.71	5.30±0.51	3.84±0.37
Nunatagmiut	55	117-150	140.93±0.50	5.46±0.35	3.87±0.25
Mackenzie	40	124-149	138.72±0.56	5.26±0.40	3.79±0.29
Victoria Island	19	130-147	140.58±0.68	4.42±0.48	3.14±0.34
Coronation Gulf	45	128-148	138.33±0.36	3.54±0.25	2.56±0.18"

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TABLE 11
Comparative Table of Mean Face Breadth

GROUP	AUTHORITY	MALES		FEMALES	
		No.	Mean	No.	Mean
Angmassalik (E. Greenland)	Poulsen	25	144.84	10	136.80
Smith Sound	Steensby	8	147.75	10	141.50
Labrador	Pittard	8	144.62	6	136.00
Labrador	Duckworth and Pain	11	142.2	10	138.6
Labrador	Virchow	3	146.7	2	134.5
Hudson Bay	Birket-Smith	99	143.4	..	.....
Coronation Gulf	Author	85	147.05	45	138.33
Coronation Gulf	Jenness	82	145.7	42	137.8
Victoria Island	Author	30	147.80	19	140.58
Mackenzie	Author	47	144.70	40	138.72
Mackenzie	Jenness	3	145.0	..	.....
Mackenzie (Koupagmiut)	Boas	13	147.8	6	139.7
Nunatagmiut	Author	64	147.05	55	140.93
Nunatagmiut	Boas	11	155.7	5	144.6
Barrow	Author	62	145.60	25	138.16
Point Hope	Jenness	13	146.3	..	.....
Kotzebue Sound	Author	30	148.37	7	142.86
Seward Peninsula	Shapiro	40	149.3	..	.....
St. Lawrence Island	Hrdlicka	63	147.3	48	140.3
Southwest Alaska	Hrdlicka	61	149.5	24	143.1
Asiatic Eskimo	Jochelson-Brodsky	60	147.6	30	138.4

9: Seltzer--333 (no date) 1933 Copper Eskimo
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"TABLE 12
Facial Index

	No.	RANGE	MEAN	S.D.	C.V.
Males:					
Kotzebue Sound	30	75-95	86.10±0.54	4.35±0.38	5.05±0.44
Barrow	62	79-99	89.00±0.42	4.80±0.30	5.48±0.33
Nunatagmiut	63	73-96	86.51±0.34	3.99±0.24	4.61±0.28
Mackenzie	46	79-96	86.80±0.43	4.29±0.30	4.94±0.35
Victoria Island	30	77-92	84.83±0.52	4.20±0.37	4.95±0.43
Coronation Gulf	65	77-103	86.94±0.37	4.48±0.27	5.15±0.30
Females:					
Kotzebue Sound	7	78-91	84.86±1.11	4.34±0.78	5.12±0.92
Barrow	25	76-95	86.52±0.67	4.96±0.47	5.73±0.55
Nunatagmiut	53	69-95	85.34±0.46	4.96±0.32	5.81±0.38
Mackenzie	39	67-93	84.23±0.57	5.25±0.40	6.23±0.48
Victoria Island	19	81-92	86.43±0.44	2.86±0.31	3.31±0.36
Coronation Gulf	45	79-98	88.27±0.47	4.42±0.31	5.01±0.36"

"TABLE 13
Divisions of the Facial Index

	EURYPRO-SOPIC (x-83.9)		MESOPRO-SOPIC (84-87.9)		LEPTOPRO-SOPIC (88-x)		TOTAL	
	No.	%	No.	%	No.	%	No.	%
Males:								
Kotzebue Sound	10	33.3	6	20.0	14	46.7	30	100
Barrow	11	17.7	15	24.2	36	58.1	62	100
Nunatagmiut	14	22.2	21	33.3	28	44.5	63	100
Mackenzie	10	21.8	18	39.1	18	39.1	46	100
Victoria Island	10	33.3	13	43.3	7	23.4	30	100
Coronation Gulf	12	18.5	22	33.8	31	47.7	65	100
Females:								
Kotzebue Sound	3	42.8	2	28.6	2	28.6	7	100
Barrow	7	28.0	6	24.0	12	48.0	25	100
Nunatagmiut	17	32.1	16	30.2	20	37.7	53	100
Mackenzie	17	43.6	8	20.5	14	35.9	39	100
Victoria Island	4	21.1	7	36.8	8	42.1	19	100
Coronation Gulf	6	13.3	15	33.3	24	53.4	45	100"

9: Seltzer--335 (no date) 1933 Copper Eskimo
116, 141

"TABLE 14
Comparative Table of Mean Facial Index

GROUP	AUTHORITY	MALES		FEMALES	
		No.	MEAN	No.	MEAN
Smith Sound	Steensby	8	85.29	10	83.64
Labrador	Duckworth and Pain	11	89.2	10	87.0
Labrador	Virchow	3	87.1	2	88.5
Hudson Bay	Birket-Smith	99	86.1	..	....
Coronation Gulf	Author	65	86.94	45	88.27
Coronation Gulf	Jennesa	83	87.0	42	88.3
Victoria Island	Author	30	84.83	19	86.43
Mackenzie	Author	46	86.80	39	84.23
Mackenzie (Koupagmiut)	Boas	12	88.9	6	86.6
Nunatagmiut	Author	63	86.51	53	85.34
Nunatagmiut	Boas	11	82.6	5	83.1
Barrow	Author	63	89.00	35	86.53
Kotzebue Sound	Author	30	86.10	7	84.86
Seward Peninsula	Shapiro	40	84.92	..	....
St. Lawrence Island	Hrdlicka	83	86.7	48	80.6
Southwest Alaska	Hrdlicka	61	84.9	24	84.6
Asiatic Eskimo	Jochelson-Brodsky	60	85.8	78	89.7"

9: Seltzer--336 (no date) 1933 Copper Eskimo
116, 141

"TABLE 15
Cephalo-Facial Index

	No.	RANGE	MEAN	S.D.	C.V.
Males:					
Kotzebue Sound	30	91-103	97.90±0.40	3.23±0.28	3.30±0.29
Barrow	62	89-103	96.48±0.28	3.25±0.20	3.37±0.20
Nunatagmiut	63	79-103	95.27±0.40	4.73±0.28	4.96±0.30
Mackenzie	46	92-108	98.98±0.36	3.60±0.25	3.64±0.26
Victoria Island	30	91-102	97.47±0.31	2.50±0.22	2.56±0.22
Coronation Gulf	65	89-105	97.29±0.23	2.76±0.16	2.84±0.17
Females:					
Kotzebue Sound	7	97-105	100.14±0.66	2.59±0.47	2.59±0.47
Barrow	25	90-100	95.56±0.32	2.38±0.23	2.49±0.24
Nunatagmiut	54	86-101	95.09±0.28	3.12±0.20	3.28±0.21
Mackenzie	39	89-108	98.41±0.38	3.50±0.27	3.56±0.27
Victoria Island	19	90-101	96.68±0.47	3.04±0.33	3.14±0.34
Coronation Gulf	46	92-101	96.20±0.22	2.20±0.15	2.29±0.16"

9: Seltzer--338 (no date) 1933 Copper Eskimo
116, 141

"TABLE 16
Comparative Table of Mean Cephalic Index

GROUP	AUTHORITY	MALES		FEMALES	
		No.	MEAN	No.	MEAN
Angmassalik (E. Greenland)	Poulson	25	98.44	10	97.78
Smith Sound	Steensby	8	96.56	10	97.65
Labrador	Pittard	8	97.66	6	95.49
Labrador	Duckworth and Pain	11	96.4	10	96.3
Labrador	Virchow	3	98.4	2	98.4
Hudson Bay	Birket-Smith	99	95.8	..	....
Coronation Gulf	Author	65	97.29	46	96.20
Coronation Gulf	Jenness	82	96.0	42	94.6
Victoria Island	Author	30	97.47	19	96.68
Mackenzie	Author	46	98.98	39	98.41
Mackenzie (Koupagmiut)	Boas	12	102.7	6	99.0
Nunatagmiut	Author	63	95.27	54	95.09
Nunatagmiut	Boas	11	100.8	5	101.6
Barrow	Author	62	96.48	25	95.56
Kotzebue Sound	Author	30	97.90	7	100.14
Seward Peninsula	Shapiro	40	98.15	..	....
St. Lawrence Island	Hrdlicka	63	95.6	48	95.0
Southwest Alaska	Hrdlicka	61	96.1	24	95.4
Asiatic Eskimo	Jochelson-Brodsky	60	96.8	80	96.3 "

9: Seltzer--339
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(no date) 1933

Copper Eskimo

"TABLE 17

Association of Cranial Types with Facial Types

	KOTZEBUE		BARROW		NUNATAGMIUT		MACKENZIE		VIC. ISLAND		COR. GULF	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Males												
Dolicho-Euryprosopic.....	0	0	1	1.6	0	0	9	19.6	1	3.3	2	3.1
Dolicho-Mesoprosopic.....	2	6.7	3	4.8	0	0	15	32.6	3	10.0	7	10.8
Dolicho-Leptoprosopic.....	6	20.0	12	19.4	1	1.8	13	28.2	2	6.7	9	13.8
Meso-Euryprosopic.....	8	26.7	7	11.3	7	11.1	1	2.2	9	30.0	9	13.8
Meso-Mesoprosopic.....	3	10.0	7	11.3	10	15.8	4	8.7	9	30.0	15	23.1
Meso-Leptoprosopic.....	7	23.3	19	30.6	16	25.4	3	6.5	4	13.4	22	33.9
Brachy-Euryprosopic.....	2	6.7	3	4.8	7	11.1	0	0	0	0	1	1.5
Brachy-Mesoprosopic.....	1	3.3	5	8.1	11	17.5	0	0	1	3.3	0	0
Brachy-Leptoprosopic.....	1	3.3	5	8.1	11	17.5	1	2.2	1	3.3	0	0
Totals.....	30	100	62	100	63	100	46	100	30	100	65	100
Females												
Dolicho-Euryprosopic....	1	14.3	1	4.0	0	0	10	25.6	2	10.5	2	4.4
Dolicho-Mesoprosopic...	1	14.3	0	0	0	0	6	15.4	1	5.3	7	15.6
Dolicho-Leptoprosopic...	0	0	5	20.0	2	3.7	9	23.1	1	5.3	15	33.3
Meso-Euryprosopic.....	2	28.6	4	16.0	5	9.3	6	15.4	2	10.5	4	8.9
Meso-Mesoprosopic.....	1	14.3	5	20.0	8	14.8	2	5.1	6	31.6	8	17.8
Meso-Leptoprosopic.....	2	28.6	6	24.0	14	25.9	5	12.8	6	31.6	9	20.0
Brachy-Euryprosopic.....	0	0	2	8.0	12	22.2	1	2.6	0	0	0	0
Brachy-Mesoprosopic....	0	0	1	4.0	8	14.8	0	0	0	0	0	0
Brachy-Leptoprosopic....	0	0	1	4.0	5	9.3	0	0	1	5.3	0	0
Totals.....	7	100	25	100	54	100	39	100	19	100	45	100"

9: Seltzer--340 (no date) 1933 Copper Eskimo
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"TABLE 18
Stature in cm.

	No.	RANGE	MEAN	S.D.	C.V.
Males:					
Barrow.....	24	149-184	164.59±1.14	8.26±0.80	5.02±0.49
Nunatagmiut.....	26	155-180	169.12±0.90	6.78±0.63	4.01±0.38
Mackenzie.....	25	159-179	168.96±0.74	5.45±0.52	3.23±0.31
Females:					
Barrow.....	7	150-161	153.71±0.98	3.84±0.69	2.49±0.45
Nunatagmiut.....	13	147-164	155.08±0.96	5.14±0.68	3.31±0.44
Mackenzie.....	16	144-163	155.50±1.00	5.93±0.71	3.81±0.45"

9: Seltzer--341
116, 141

(no date) 1933

Copper Eskimo

"TABLE 19

Comparative Table of Mean Stature

GROUP	AUTHORITY	MALES		FEMALES	
		No.	MEAN	No.	MEAN
Angmassalik (E. Greenland)	Hansen(1914)	31	164.7	15	155.1
Angmassalik (E. Greenland)	Poulsen	26	162.35	10	149.13
Southeast Greenland	Hansen (1914)	22	160.4	23	152.9
Southwest Greenland	Hansen (1914)	21	157.6	24	151.8
West Greenland	Hansen (1893)	..	162.0	..	152.0
Greenland	Deniker	614	162.1	..	.....
Smith Sound	Steensby	8	157.4	10	145.4
Labrador	Pittard	8	158.2	6	155.6
Labrador	Duckworth and Pain	11	157.7	10	149.7
Labrador	Virchow	3	159.7	2	148.6
Labrador	Boas (1895)	26	157.5	..	148.0
Cumberland Sound(Baffin Land)	Boas (1907)	9	162.0	12	151.8
Cumberland Strait(Baffin Land)	Sutherland (1856)	23	158.50	30	148.08
Baffin Island	Oetteking	10	162.4	13	147.9
Hudson Bay	Birket-Smith	99	160.6	..	.....
Melville Peninsula	Parry (1824)	20	166.0	20	153.7
Southampton Island	Tocher	35	162.0	..	.....
Coronation Gulf	Jenness	82	164.8	42	156.4
Mackenzie	Author	25	168.96	16	155.50
Mackenzie (Koupagmiut)	Boas	12	167.5	6	151.5
Nunatagmiut	Author	26	169.12	13	155.08
Nunatagmiut	Boas	11	167.9	5	155.6
Barrow	Author	24	164.59	7	153.71
Point Hope	Jenness	13	166.5	..	.....
Seward Peninsula	Shapiro	39	165.4	..	.....
St. Lawrence Island	Hrdlička	63	163.3	48	151.35
Southwest Alaska	Hrdlička	61	162.4	24	153.10
Alaska	Boas (1895)	34	165.8	..	155.1
Alaska	Deniker (1913)	85	163.0	..	.....
Asiatic Eskimo	Jochelson-Brodsky	61	162.3	80	151.8"

9: Seltzer--342 (no date) 1933 Copper Eskimo
116, 141

"TABLE 20
Sitting Height

	NO.	RANGE	MEAN	S.D.	C.V.
Males:					
Barrow	22	78-96	88.18±0.57	3.93±0.40	4.46±0.45
Nunatagmiut	21	76-98	86.43±0.63	4.30±0.45	4.98±0.52
Mackenzie	10	84-96	91.20±0.76	3.57±0.54	3.91±0.59
Females:					
Barrow	5	79-86	82.20±0.69	2.27±0.51	2.76±0.59
Nunatagmiut	12	79-88	82.67±0.48	2.46±0.34	2.98±0.41
Mackenzie	11	79-90	85.54±0.74	3.65±0.52	4.27±0.61"

9: Seltzer--343
116, 141

(no date) 1933

Copper Eskimo

"TABLE 21

Comparative Table of Mean Sitting Height

GROUP	AUTHORITY	MALES		FEMALES	
		No.	MEAN	No.	MEAN
Angmassalik (E. Greenland)	Poulsen	24	86.79	10	79.98
Smith Sound	Steensby	8	82.5	10	78.1
Labrador	Duckworth and Pain	11	81.0	10	79.7
Southampton Island	Tocher	35	85.2	..	.....
Mackenzie	Author	10	91.20	11	85.54
Mackenzie (Koupagmiut)	Boas	12	89.3	8	81.2
Nunatagmiut	Author	21	86.43	12	82.67
Nunatagmiut	Boas	11	86.8	5	81.8
Barrow	Author	22	88.18	5	82.20
St. Lawrence Island	Hrdlička	63	88.40	48	84.07
Southwest Alaska	Hrdlička	61	89.00	24	84.36"

(no date) 1933

Copper Eskimo

"TABLE 22
Relative Sitting Height

	No.	RANGE	MEAN	S.D.	C.V.
Males.					
Barrow	22	52-56	53.68±0.18	1.26±0.13	2.35±0.24
Nunatagmiut	21	47-55	51.52±0.28	1.92±0.20	3.73±0.39
Mackenzie	10	50-57	53.30±0.33	1.55±0.23	2.91±0.44
Females:					
Barrow	5	52-56	53.60±0.49	1.63±0.35	3.04±0.65
Nunatagmiut	11	50-56	53.45±0.36	1.78±0.26	3.33±0.48
Mackenzie	11	53-57	55.18±0.26	1.27±0.18	2.30±0.33"

"TABLE 23
Comparative Table of Mean Relative Sitting Height

GROUP	AUTHORITY	MALES		FEMALES	
		No.	MEAN	No.	MEAN
Angmassalik (E. Greenland)	Poulsen	24	53.31	10	53.64
Smith Sound	Steensby	8	52.4	10	53.7
Labrador	Duckworth and Pain.	11	51.4	10	53.3
Southampton Island	Tocher	35	52.6	..	.....
Mackenzie	Author	10	53.30	11	55.18
Mackenzie (Koupagmiut)	Boas	12	53.5	6	53.7
Nunatagmiut	Author	21	51.52	11	53.45
Nunatagmiut	Boas	11	52.6	5	52.4
Barrow	Author	22	53.68	5	53.60
St. Lawrence Island	Hrdlicka	63	54.13	48	55.55
Southwest Alaska	Hrdlicka	61	54.90	24	55.10"

9: Seltzer--344-346 (no date) 1933 Copper Eskimo-1-2
116, 128, 141

"Up to this point, I have presented the summary of the measurements of the six Eskimo groups without attempting to demonstrate the relationships existent between them. Now it is my purpose, by means of statistical devices, to detect the differences and similarities between the groups and to show their statistical significance beyond a reasonable doubt.

Accordingly, I have calculated the differences between the means of the various groups and the probable errors of these differences. And finally their relationship was expressed in terms of 'xpe,' obtained by dividing the differences between means by the probable errors of the differences.

In the following tables, I have used this statistical method to compare one Eskimo group with another. There are differences between every group, but now it is possible to demonstrate which differences are significant beyond a reasonable doubt, and which ones are merely different due to random sampling.

The first column of every table contains the means and probable errors of the main group subject to comparison. The rest of the groups [p. 345 contains a chart] [346] have two columns, the first giving the differences between means for each measurement, and at the base of which I have computed the average of the differences irrespective of signs; the second column headed by 'xpe' gives the number of times the difference exceeds the probable error of the difference.

All differences that have xpe's over 3.00 are unquestionably significant differences

and are printed in bold faced type, for the chances are more than 96 out of 100 that such differences are not due to random sampling. Those differences that are between 2 and 3 times their own probable errors, whose chances of being significant are from 82 to 96 out of 100, may be said to be possibly or probably significant and are printed in italics. All differences having an xpe less than 2.00 are considered to be differences due merely to the random sampling process."

9: Seltzer--346-354 (no date) 1933 Copper Eskimo-1-4
116, 141

"In Table 24 I have compared the measurements and indices of the Kotzebue men and women with those of the rest of the Eskimos.

The most striking feature of this table is the extraordinarily close resemblance between the Kotzebue Sound and Victoria Island males. There is no question about this similarity, for the Victoria Islanders are significantly different only in one characteristic, face height, and this is but a possibly significant difference. This fact is all the more remarkable when we consider that the Kotzebue Sound people live on the northwest coast of Alaska, while the Victoria Islanders are far to the eastward, north of Coronation Gulf. The average difference between the Kotzebue and the Victoria Island males is only 0.99.

The Victoria Island females do not evidence as great a similarity with the Kotzebue females, but this may be possibly due to the extremely small size of the Kotzebue sample, there being but 8 in the series.

The next closest relationship is found between the Kotzebue and Coronation Gulf males, the latter being significantly different in head length and possibly different in cephalic index.

Although the Barrow are most closely situated to the Kotzebue, the males show more differences than with the Victoria Islanders and Coronation Gulfers, the Barrow being significantly different in face breadth and facial index, and possibly different in face height and cephalo-facial index.

The Nunatagmiut and Mackenzie males show no evidence of similarity with the Kotzebue Sound Eskimos. [347]

The Kotzebue females are in general distinguished from the rest of the women in having narrower heads, much broader faces and extremely high cephalo-facial indices.

From Table 25 the Barrow males appear to be most closely related to their Kotzebue neighbors. The rest of the groups show no apparent similarity to the Barrow men.

The Barrow females do not differ from their Eskimo relatives as do the males, for the Victoria Island women are inseparable physically from the Barrow with only one possibly significant difference, face breadth, and having an average difference of 1. 26. Although the Coronation Gulf females show more significant differences than the Victoria Islanders, they are still closer to the Barrow than are the Kotzebue Sound women.

Table 26 contrasts the Nunatagmiut with the other Eskimo groups. The most outstanding feature of this table is the fact that the Nunatagmiut do not exhibit any close relationships with the other Eskimos. They have the shortest heads, the broadest heads, the highest cephalic indices, the lowest cephalo-facial indices, and the lowest relative sitting height of all the Eskimos considered in this paper.

These are all Indian-like features and clearly betray the presence of considerable Indian blood that must have entered this group in comparatively recent times.

An examination of Table 27 accentuates all the distinctive characteristics of the Mackenzie Eskimo. There is no group, either among the males or females, that can

claim any close relationship with them whatsoever. They are distinguished from the rest of the Eskimos by the absence of Indian tendencies and by the exaggeration of Eskimo features. The Mackenzie heads are the longest, narrowest, with the lowest cephalic indices; their faces are the narrowest with very high cephalo-facial indices; and the relation of sitting height to stature indicates that they are endowed with very long trunks.

If we take all these facts into consideration, and if we accept the relation between the breadth of head and the breadth of face as being an index of purity of Eskimo blood, then we must conclude that the Mackenzie are the most Eskimoid of all the Eskimos.

There are three important facts, concerning the Victoria Island males, that are indicated in Table 28.

The first one pertains to the outstanding similarity between the Victoria Island and Kotzebue males which has been already pointed out. [pp. 348-353 contain charts] [354] The second demonstrates that the Kotzebue Sound Eskimos are more like the Victoria Island men than the geographically more closely situated Coronation Gulf group. And finally, the Victoria Islanders lean toward Canadian Indian features to a greater degree than their southern Coronation Gulf neighbors.

The female Victoria Island series shows unusual identity with the Barrow, more so than with the Coronation Gulfers. The Kotzebue women would not differ very much from

the Victoria Islanders were it not for the former's extremely high cephalo-facial index. Again as in the males, the Victoria Island females show greater Indian tendencies in physical features than the Coronation Gulf group.

The male Coronation Gulf Eskimos resemble the Kotzebue Sound men more than they do the Victoria Islanders.

The Victoria Island females are fairly similar to the Coronation Gulf women, being significantly different in cephalic index by 1.55 points, and possible different in face breadth and facial index."

9: Seltzer--348
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(no date) 1933

Copper Eskimo

"TABLE 24

Differences Between Means of Kotzebue Sound and Other Eskimo Males and Females

	KOTZEBUE	BARROW		NUNATAGMIUT		MACKENZIE		VICTORIA IS.		CORO. GULF	
Males	Mean	diff.	±pe.	diff.	±pe.	diff.	±pe.	diff.	±pe.	diff.	±pe.
Head Length	193.50±0.72	−0.11	−0.13	−2.47	−3.01	3.76	4.13	1.63	1.75	3.21	3.73
Head Breadth	151.60±0.77	−0.48	−0.53	2.88	3.39	−4.92	−5.60	0.23	0.25	−0.51	−0.60
Cephalic Index	78.60±0.4[illegible]	−0.05	−0.09	3.78	5.27	−3.85	−7.13	−0.30	−0.57	−1.34	−2.63
Face Height	127.73±0.56	1.90	2.19	−0.67	−0.80	−2.16	−3.40	−2.53	−3.60	−0.01	−0.01
Face Breadth	148.37±0.61	−2.68	−3.27	−1.32	−1.52	−3.67	−4.32	−0.57	−0.63	−1.32	−1.69
Facial Index	86.10±0.54	3.90	4.20	0.41	0.62	0.70	1.01	−1.27	−1.70	0.84	1.28
Cephalo-Facial Index	97.90±0.40	−1.42	−2.90	−3.63	−4.61	1.08	2.00	−0.43	−0.84	−0.61	−1.33
Average differences		1.36		1.88		2.88		0.99		1.12	
Females											
Head Length	185.00±0.48	−0.12	−0.16	−2.09	−3.37	1.90	2.53	1.74	1.81	2.70	3.70
Head Breadth	142.50±0.92	2.04	1.94	5.96	5.96	−1.60	−1.80	2.87	2.50	1.27	1.37
Cephalic Index	77.00±0.51	1.12	1.81	4.18	7.21	−1.62	−2.80	0.79	1.27	−0.76	−1.41
Face Height	119.25±1.91	0.15	0.07	1.13	0.56	−2.17	−1.04	2.43	1.17	2.48	1.22
Face Breadth	142.86±0.72	−4.70	−4.65	−1.93	−2.19	−4.14	−4.55	−2.28	−2.30	−4.53	−5.00
Facial Index	84.86±1.11	1.66	1.28	0.48	0.40	−0.63	−0.50	1.57	1.32	3.41	2.84
Cephalo-Facial Index	100.14±0.68	−4.58	−6.19	−5.05	−7.01	−1.73	−2.28	−3.46	−4.27	−3.94	−5.63
Average differences		2.05		2.97		1.97		2.15		2.88	

9: Seltzer--349
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Copper Eskimo

"TABLE 25

Differences Between Means of Barrow and Other Eskimo Males and Females

	BARROW	KOTZEBUE		NUNATAGMIUT		MACKENZIE		VICTORIA IS.		CORO. GULF	
Males	Mean	diff.	xpe.	diff.	xpe.	diff.	xpe.	diff.	xpe.	diff.	xpe.
Head Length	192.39±0.54	0.11	0.12	−2.36	−3.52	3.67	4.96	1.74	2.20	3.32	4.67
Head Breadth	151.11±0.49	0.49	0.53	3.37	5.62	−4.43	−6.92	0.72	1.04	−0.02	−0.03
Cephalic Index	78.55±0.28	0.05	0.09	2.84	7.49	−3.80	−9.74	−0.25	−0.70	−1.20	−3.70
Face Height	129.63±0.67	−1.90	−2.19	−2.57	−2.79	−4.06	−4.14	−4.43	−4.22	−1.91	−2.20
Face Breadth	145.69±0.55	2.68	3.27	1.36	1.66	−0.99	−1.30	2.11	2.33	1.36	2.03
Facial Index	89.00±0.42	−2.90	−4.20	−2.49	−4.53	−2.20	−3.67	−4.17	−6.23	−2.06	−3.44
Cephalo-Facial Index.	96.48±0.28	1.42	2.90	−1.21	−2.48	2.50	5.44	0.89	2.36	0.81	2.26
Stature	164.59±1.14	....	....	4.53	3.12	4.37	3.95	....	....	....	....
Sitting Height	88.18±0.57	....	....	−1.75	−2.06	3.02	3.18	....	....	....	....
Relative Sitting Height.	53.68±0.18	....	....	−2.16	−6.55	−0.38	−1.03	....	....	....	....
Average differences		1.36		2.46		2.96		2.06		1.54	
Females											
Head Length	184.88±0.61	0.12	0.16	−1.97	−2.67	2.02	2.38	1.76	1.44	3.82	4.66
Head Breadth	144.54±0.51	−2.04	−1.94	3.92	6.13	−3.64	−5.78	0.83	0.97	−0.67	−1.03
Cephalic Index	78.12±0.36	−1.12	−1.81	3.06	6.66	−2.74	−5.96	−0.33	−0.65	−1.88	−4.70
Face Height	119.40±1.01	−0.15	−0.07	0.98	0.83	−2.32	−1.78	2.26	1.78	2.33	1.89
Face Breadth	138.16±0.71	4.70	4.85	2.77	3.19	0.56	0.62	2.42	2.47	0.17	0.22
Facial Index	86.52±0.67	−1.66	−1.28	−1.18	−1.46	−2.29	−2.60	−0.09	−0.11	1.75	2.13
Cephalo-Facial Index.	95.56±0.32	4.58	6.19	−0.47	−1.12	2.85	5.81	1.12	1.97	0.64	1.65
Stature	153.71±0.98	....	....	1.37	1.00	1.79	1.28	....	....	....	....
Sitting Height	82.20±0.89	....	....	0.47	0.56	3.34	3.31	....	....	....	....
Relative Sitting Height.	53.60±0.49	....	....	−0.15	−0.24	1.58	2.82	....	....	....	....
Average differences		2.05		1.63		2.31		1.26		1.61	

9: Seltzer--350
116, 141

(no date) 1933

Copper Eskimo

"TABLE 26

Differences Between Means of Nunatagmiut and Other Eskimo Males and Females

	NUNATAGMIUT	KOTZEBUE		BARROW		MACKENZIE		VICTORIA IS.		CORO. GULF	
Males	Mean	diff.	xpe.	diff.	xpe.	diff.	xpe.	diff.	xpe.	diff.	xpe.
Head Length	190.03±0.40	2.47	3.01	3.38	3.52	6.23	9.62	4.10	5.78	5.68	9.16
Head Breadth	154.48±0.39	-2.88	-3.39	-3.37	-5.62	-7.80	14.44	-2.65	-4.50	-3.39	-6.78
Cephalic Index	81.39±0.25	-2.79	-5.27	-2.84	-7.49	6.64	18.33	-3.09	-8.83	-4.13	-13.91
Face Height	127.06±0.63	0.67	0.80	2.57	2.79	-1.49	-1.57	-1.86	-1.81	0.66	0.79
Face Breadth	147.05±0.62	1.32	1.52	-1.36	-1.66	-2.35	-2.73	0.75	0.82	0.00	0.00
Facial Index	86.51±0.34	-0.41	-0.62	2.49	4.53	0.29	0.53	-1.68	-2.71	0.43	0.84
Cephalo-Facial Index	95.27±0.40	2.63	4.61	1.21	2.48	3.71	6.87	2.20	4.31	2.02	4.40
Stature	169.12±0.90	....	....	-4.53	3.13	-0.16	-0.14	....	....	....	....
Sitting Height	88.43±0.63	....	....	1.75	2.06	4.77	4.82	....	....	....	....
Relative Sitting Height	51.52±0.28	....	....	2.18	6.55	1.78	4.05	....	....	....	....
Average differences		1.88		2.46		3.52		2.33		2.33	
Females											
Head Length	182.91±0.43	2.09	3.37	1.97	2.67	3.99	5.39	3.83	3.36	5.79	9.19
Head Breadth	148.46±0.39	-5.96	-5.96	3.92	6.13	-7.56	-14.00	-3.09	-3.91	-4.59	-8.20
Cephalic Index	81.18±0.28	-4.18	-7.21	-3.06	-5.66	-5.80	-14.30	-3.39	-7.37	-4.94	-14.97
Face Height	120.38±0.60	-1.13	-0.56	-0.98	-0.83	-3.30	-3.27	1.30	1.30	1.35	1.47
Face Breadth	140.93±0.50	1.93	2.19	-2.77	-3.19	-2.21	-2.95	-0.35	-0.43	-2.60	-4.23
Facial Index	85.34±0.46	-0.48	-0.40	1.18	1.46	-1.11	-1.52	1.39	2.21	2.93	4.44
Cephalo-Facial Index	95.09±0.28	5.05	7.01	0.47	1.12	3.32	7.07	1.59	2.89	1.11	3.84
Stature	155.08±0.96	....	....	-1.37	-1.00	0.42	0.30	....	....	....	....
Sitting Height	83.67±0.48	....	....	-0.47	0.56	2.67	3.36	....	....	....	....
Relative Sitting Height	53.45±0.36	....	....	0.15	0.24	1.73	3.84	....	....	....	....
Average differences		2.97		1.63		3.29		2.13		3.33	

9: Seltzer--351
116, 141

(no date) 1933

Copper Eskimo

"TABLE 27

Differences Between Means of Mackenzie and Other Eskimo Males and Females

	MACKENZIE	KOTZEBUE		BARROW		NUNATAGMIUT		VICTORIA IS.		CORO. GULF	
Males	Mean	diff.	xpe.	diff.	xpe.	diff.	xpe.	diff.	xpe.	diff.	xpe.
Head Length	196.26±0.56	3.76	4.13	-3.87	-4.96	-6.23	-9.02	-2.13	-2.63	-0.55	-0.76
Head Breadth	146.68±0.41	4.92	5.60	4.43	6.92	7.80	14.44	5.18	8.18	4.41	8.02
Cephalic Index	74.75±0.26	3.85	7.13	3.80	9.74	6.64	18.33	3.55	9.87	2.51	7.81
Face Height	125.57±0.71	2.16	2.40	4.06	4.14	1.49	1.57	-0.37	-0.36	2.15	2.42
Face Breadth	144.70±0.60	3.67	4.32	0.99	1.30	2.35	2.73	3.10	3.49	2.35	3.31
Facial Index	86.80±0.43	-0.70	-1.01	2.20	3.67	-0.29	-0.53	-1.97	-2.94	0.14	0.25
Cephalo-Facial Index	98.98±0.36	-1.08	-2.00	-2.50	-5.44	-3.71	-6.78	-1.51	-3.15	-1.69	-4.02
Stature	166.96±0.74	....	....	-4.37	-3.95	0.16	0.14	....	....	....	....
Sitting Height	91.20±0.76	....	....	-3.02	-3.18	-4.77	-4.82	....	....	....	....
Relative Sitting Height	53.50±0.33	....	....	0.38	1.03	-1.78	-4.05	....	....	....	....
Average differences		2.88		2.96		3.52		2.54		1.98	
Females											
Head Length	186.90±0.60	-1.90	-2.53	-2.02	-2.38	-3.99	-5.39	-0.16	-0.13	1.80	2.37
Head Breadth	140.90±0.37	1.60	1.60	3.64	5.78	7.56	14.00	4.47	5.66	2.97	5.40
Cephalic Index	75.38±0.28	1.62	2.80	3.74	5.96	5.80	14.50	2.41	5.24	0.86	2.61
Face Height	177.08±0.82	2.17	1.04	2.32	1.78	3.30	3.27	4.60	4.00	4.65	4.31
Face Breadth	138.72±0.56	4.14	4.55	-0.56	-0.62	2.21	2.95	1.86	2.11	-0.39	-0.59
Facial Index	84.23±0.57	0.63	0.50	2.29	3.60	1.11	1.52	2.20	3.10	4.04	5.46
Cephalo-Facial Index	98.41±0.38	1.73	2.28	-2.85	-5.81	-3.32	-7.07	-1.73	-3.88	-2.21	-5.02
Stature	155.50±1.00	....	....	-1.79	-1.28	-0.42	-0.30	....	....	....	....
Sitting Height	85.54±0.74	....	....	3.34	-3.31	-2.87	-3.28	....	....	....	....
Relative Sitting Height	55.18±0.26	....	....	-1.58	-2.82	-1.73	-3.84	....	....	....	....
Average differences		1.97		2.31		3.23		3.49		2.42	

9: Seltzer--352
116, 141

(no date) 1933

Copper Eskimo

"TABLE 28

Differences Between Males of Victoria Island and Other Eskimo Males and Females

	VICTORIA IS.	KOTZEBUE		BARROW		NUNATAGMIUT		MACKENZIE		CORO. GULF	
Males	Mean	diff.	xpe.	diff.	xpe.	diff.	xpe.	diff.	xpe.	diff.	xpe.
Head Length.....	194.13±0.58	-1.63	1.75	-1.74	2.20	-4.10	-5.78	2.13	2.63	1.58	2.10
Head Breadth.....	151.83±0.48	0.23	0.25	-0.72	1.04	2.65	4.50	-5.15	-8.18	-0.74	1.23
Cephalic Index.....	78.30±0.24	0.30	0.57	0.25	0.70	3.09	8.83	-3.55	-9.87	-1.04	3.25
Face Height.....	125.20±0.81	2.53	3.60	4.43	4.22	1.86	1.81	0.37	0.36	2.52	2.57
Face Breadth.....	147.80±0.66	0.57	0.63	-2.11	-2.33	-0.75	0.82	-3.10	-3.49	-0.75	-0.98
Facial Index.....	84.83±0.52	1.27	1.70	4.17	6.22	1.68	2.71	1.97	2.94	2.11	3.29
Cephalo-Facial Index	97.47±0.31	0.43	0.84	-0.99	-2.36	-2.20	-4.31	1.51	3.15	-0.18	-0.47
Average differences.....		0.99		2.06	-	2.33		2.54		1.27	
Females											
Head Length.....	186.74±1.08	1.74	1.51	1.76	1.44	3.83	-3.36	0.16	0.13	1.96	1.69
Head Breadth.....	145.37±0.69	-2.87	-3.50	0.83	0.97	3.09	3.91	-4.47	-5.66	-1.50	-1.88
Cephalic Index.....	77.79±0.36	0.79	1.27	0.33	0.65	3.39	7.37	-2.41	-5.24	-1.55	-3.87
Face Height.....	121.68±0.80	2.43	1.17	2.28	1.78	1.30	1.30	-4.60	-4.00	0.05	0.05
Face Breadth.....	140.58±0.68	2.28	2.30	2.42	2.47	0.35	0.42	-1.86	-3.11	-2.25	-2.92
Facial Index.....	86.43±0.44	-1.57	-1.32	0.09	0.11	1.39	2.21	-2.20	-3.10	1.84	2.83
Cephalo-Facial Index	96.68±0.47	3.46	4.27	1.12	1.97	1.59	2.89	1.73	2.88	-0.48	-0.92
Average differences.....		2.15		1.36		2.13		2.49		1.38	

9: Seltzer--353
116, 141

(no date) 1933

Copper Eskimo

"TABLE 29

Differences Between Means of Coronation Gulf and Other Eskimo Males and Females.

	CORO. GULF		KOTZEBUE		BARROW		NUNATAGMIUT		MACKENZIE		VICTORIA IS.	
Males	Mean		diff.	xpe.	diff.	xpe.	diff.	xpe.	diff.	xpe	diff.	xpe.
Head Length	195.71	0.47	3.21	3.73	3.32	4.67	5.68	9.16	0.55	0.76	1.58	2.10
Head Breadth	151.09	0.36	0.51	0.60	0.02	0.03	3.39	6.78	4.41	9.02	0.74	1.23
Cephalic Index	77.26	0.20	1.34	2.63	1.29	3.70	4.13	12.91	2.51	7.81	1.04	3.25
Face Height	127.72	0.55	0.01	0.01	1.91	2.20	0.66	0.79	2.15	2.42	2.52	2.57
Face Breadth	147.05	0.39	1.32	1.83	1.36	2.03	0.00	0.00	2.35	3.31	0.75	0.98
Facial Index	86.94	0.37	0.84	1.28	2.06	3.44	0.43	0.84	0.14	0.25	2.11	3.29
Cephalo-Facial Index	97.29	0.23	0.61	1.33	0.81	2.26	2.02	4.40	1.69	4.02	0.18	0.47
Average differences			1.12		1.54		2.33		1.98		1.27	
Females												
Head Length	188.70	0.47	3.70	5.70	3.82	4.90	5.79	9.19	1.80	2.37	1.96	1.69
Head Breadth	143.87	0.40	1.37	1.37	0.67	1.03	4.59	8.20	2.97	5.40	1.50	1.88
Cephalic Index	76.24	0.17	0.76	1.41	1.88	4.70	4.94	14.97	0.86	2.61	1.55	3.87
Face Height	121.73	0.70	2.48	1.22	2.33	1.89	1.35	1.47	4.65	4.31	0.05	0.05
Face Breadth	138.33	0.36	4.53	5.60	0.17	0.22	2.60	4.23	0.39	0.59	2.25	2.92
Facial Index	88.27	0.47	3.41	2.84	1.75	2.13	2.93	4.44	4.04	5.46	1.84	2.83
Cephalo-Facial Index	96.20	0.22	3.94	5.63	0.64	1.65	1.11	3.84	2.21	5.02	0.48	0.92
Average differences			2.88		1.61		3.33		2.42		1.38	

9: Seltzer--354 (no date) 1933 Copper Eskimo
116, 121, 174

"The science of anthropology, although usually subdivided into its various branches, ethnology, ethnography, somatology and archaeology, is essentially a closely knit and interrelated study. The examination of no single branch alone is adequate if a thorough understanding of a cultural group is to be obtained. It is necessary, in a study of the historical background and culture of a people, that cognizance be taken of all the factors that went into the making of that cultural pattern. It is the complete devotion to all the evidence at our command, --the somatological, the ethnological, the archaeological and the ethnographical--which will reveal to us the true history, the true cultural pattern of a people.

Nowhere is this statement more pertinent than in the question of the origin of the Eskimos. It is essential that we bring to bear all the evidence we have in order to solve this perplexing problem."

9: Seltzer--354-358 (no date) 1933 Copper Eskimo-1-8
116, 144, 174

"Thus far those who have unearthed the archaeological data, those who have determined the ethnological material, those who have studied the geographical distribution of the Eskimo, have failed adequately to bring into relation their results with the available somatological data. In this paper I intend to correlate the physical evidence concerning the Eskimo with the known facts of material culture that have been eluci- [355] dated by such eminent authorities as Boas, Steensby, Rasmussen, Mathiassen, Birket-Smith and Jenness.

Many theories have been postulated for the origin of the Eskimo and the sequence of Eskimo cultures, but the most complete and comprehensive theory has been presented by Birket-Smith. (13) The various cultures in chronological sequence he gives as follows:

13. Birket-Smith, 1928 and 1929.

(1) Proto-Eskimo--a 'circumpolar ice-hunting culture' in the remote past, the Caribou Eskimos west of Hudson Bay being the last survivors.

(2) Palae-Eskimo--the bearers of this culture were once Proto-Eskimo but were the first group to adapt themselves to life at the sea, spreading all over the Arctic.

(3) Thule--corresponds to Steensby's Neo-Eskimo culture, (14) originating in the

14. Steensby, 1910.

west, most probably in Alaska, then spreading eastward to Greenland. The Thulers depended mainly on the hunting of whales.

(4) Eschato-Eskimo--represented by the Central Eskimo cultures. The bearers of this culture have fairly recently migrated north from inland.

In addition to the above we must add the as yet little known 'Bering Sea Culture' discovered in Alaska, which is considered by Jenness (15) to be older than the Thule.

15. Jenness, 1928.

Archaeologists and ethnologists are in complete agreement as to the existence of the Thule and the more recent Eschato-Eskimo cultures. But they disagree as to the Proto- and Palae-Eskimo cultures as expounded by Birket-Smith. For example, Mathiassen (16)

16. Mathiassen, 1930.

cannot find evidence for the presence of an older culture in the central regions than the Thule.

The question of the Proto- and Palae-Eskimos need not concern us at this point, but let us instead examine the somatological evidence for the Thule and Eschato-Eskimo cultures.

The Bearers of the Old Thule Culture

Mathiassen (17) has pointed out the fact that on the basis of various cultural evidences

17. Mathiassen, 1927.

it was apparent that the Thule culture originated in [356] western Alaska and from that focus spread eastwards right to Greenland. What were the physical characteristics of the bearers of this culture was not known, until fortunately, in 1918, Van Valin (18)

18. Hrdlička, 1930.

discovered a group of mounds near Point Barrow, Alaska, which contained a series of skeletal remains associated with artifacts of Thule type. That this culture belonged to the Thule people is a fact that has been adequately and conclusively demonstrated by Mason. (19) And further, that this was a historically ancient site is attested to by Van

19. Mason, 1928.

Valin, who on questioning the present inhabitants of Point Barrow, found that they had

no historical recollection of the existence of any previous group in this region, or that these mounds were actually 'Igloos.'

These important skeletons were measured in 1928 by Hrdlička (20) who came to the

20. Hrdlička, 1930.

conclusion that the bones of the Old Igloo Thulers were the remains of Eskimos whose physical type differed radically from groups now living in Alaska. On the basis of his report, the skeletal remains are distinguished by the great length and extreme narrowness of their skulls, with consequently low cranial indices, and also by their excessively high breadth-height indices. In short, the Old Igloo Thulers were described as a tall statured, dolichocephalic, orthocephalic, akrocephalic, hypsiconch, leptorrhine group.

These skeletons represent an individually characteristic and distinctive type which is clearly differentiated from almost all other Eskimo cranimetric series. They are distinguished from them in possessing the longest skulls, by far the narrowest skulls, the lowest cranial indices, the highest skull vaults, the highest cephalo-facial and breadth-height indices, and one of the tallest statures.

Do any of the existing Eskimo groups resemble this skeletal series by exhibiting similar characteristic features, or has this type entirely disappeared into the existing populations? A survey of the physical characteristics of the existing Eskimo tribes

brings to light the fact that of all the groups, the Mackenzie seem to fit this description best. We have seen, in previous pages, how the measurements and indices of this group stamped them apart from all the rest. These Mackenzie were described as the most Eskimoid of all the Eskimos. There was no group in the material studied that could lay claim to any close relationship with them whatsoever. The Mackenzie Eskimos were distinguished [357] from the other living groups in having the longest heads, the narrowest heads, the lowest cephalic indices, one of the highest cephalo-facial indices, and one of the tallest statures. Thus it may be seen that the Mackenzie Eskimos differ from the other living groups in the same characteristics and in the same direction as do the Old Igloo crania from the other Eskimo skeletal collections.

The fact that these two groups differ markedly from all the other groups in similar measurements and indices, in the same direction, and are both extreme types, leads one to suspect that they are of the same racial stock. Both are very long headed, both are very narrow headed, both have very low cranial indices, very high cephalo-facial indices, and tall statures.

Such close resemblances between two groups cannot be fortuitous, but on the other hand are a cogent argument for the postulation of racial identity, thereby confirming the conclusion that physically the Mackenzie Eskimos are the living descendants of the original bearers of the old Thule culture.

Are there any other Eskimos who resemble the Old Igloo Thulers in physical characteristics? From the geographical distribution of archaeological remains of the Thule type one would expect the Smith Sound, Baffin Land, Labrador and Greenland Eskimos to show close somatological likenesses with the Old Igloo people. Nevertheless, we do not find this condition, for the physical type has been changed, probably as the result of the penetration of newer peoples into these regions and the extinction of the Thulers.

Mason (21) has made the following statement:

> 21. Mason, 1928.
>
> it may now be stated that the bearers of the Thule Culture in Alaska were of a definite physical type and, according to Doctor Hrdlička, this type is identical with that of the present Eskimo of Southern Greenland and Labrador, and different from that of the modern Alaskan Eskimo.

I can find no evidence to substantiate this quotation in its entirety; in fact, all the material that we have, meager though it is, refutes some of these suppositions. The present Labrador Eskimos do not resemble the Old Igloo Thulers. The former have

shorter and wider heads, higher cephalic indices, longer faces, and much lower cephalo-facial indices. Most important of all is the fact that their statures are in no manner alike, the Labrador Eskimo being very short, having a mean [358] stature of about 157 cm., while the Old Igloo Thulers stand about 12.5 cm. taller, with a mean of 169.50 cm.

A study of the anthropometric data on the Greenland Eskimos does reveal some resemblances in physical features with the Thulers. Hrdlička, in 1929, emphasized a close connection between the Old Igloo skeletons and a series of undated crania from Greenland. In facial dimensions there appeared many 'striking similarities.' However, in regard to the proportions of the cranial vault these similarities were not so impressive. The mean difference between the two series for cranial length was 2.8 mm., cranial breadth 3.1 mm., cranial height 0.7 mm., cranial index 2.7, and for the height-breadth index 3.0 index units. These differences although not widely divergent are not small enough to presume physical identity, especially inasmuch as we are dealing with two series of the same racial grouping. Nevertheless, taking all the Greenland evidence as a whole, it may be stated that the Eskimos of that country have a basic strain of Thule blood which has been overlayed to a variable degree by a new infusion of a very short-statured, low-headed group, concerning which more will be said later.

Bessel's (22) measurements of a series of 100 Smith Sound crania would throw

22. Bessel, 1875.

considerable light upon the question of Thule inhabitants in that far north region, if the skulls had been sexed. Unfortunately, the unsexed data cannot be interpreted with any amount of confidence, so that we shall have to wait until this valuable collection is re-examined.

In summary of the existing knowledge concerning the bearers of the Thule Culture, we may say that the Mackenzie Eskimos are their only approximately pure living descendants, although traces of their blood can be found in other parts of the Arctic, particularly as a basic substratum in Greenland."

9: Seltzer--360
116, 141, 144, 174

(no date) 1933

Copper Eskimo

"TABLE 30

Comparison Between Chipewyan Males and Western and Central Eskimos

No.	CHIPEWYAN PURE (44)	SOUTHWEST ALASKA (61)	ST. LAWRENCE ISLAND (63)	SEWARD PENINSULA (40)	KOTZEBUE SOUND (30)	VICTORIA ISLAND (30)	CORONATION GULF (65)	CORONATION GULF (82)	SMITH SOUND (8)
Measurements	Grant	Hrdlicka	Hrdlicka	Shapiro	Author	Author	Author	Jenness	Steensby
Head Length	193.5	192.9	193.3	195.3	192.50	194.13	195.71	195.9	190.25
Head Breadth	153.7	155.6	154.0	152.2	151.60	151.83	151.09	151.8	153.75
Cephalic Index	79.3	80.7	79.7	77.96	78.60	78.30	77.26	77.6	78.06
Face Height	125.3	126.7	126.8	126.9	127.73	125.20	127.72	126.9	125.38
Face Breadth	149.6	149.5	147.3	149.3	148.37	147.80	147.05	145.7	147.75
Facial Index	83.8	84.9	86.7	84.92	86.10	84.83	86.94	87.0	85.29
Cephalo-Facial Index	97.6	96.1	95.6	98.15	97.90	97.47	97.29	96.0	96.56
Stature	166.4	162.4	163.3	165.4	.....	.....	.....	164.8	167.4
Differences									
Head Length	193.5	—0.6	—0.2	1.8	—1.00	0.63	2.21	2.4	2.75
Head Breadth	153.7	1.9	0.3	—1.5	—2.10	—1.87	—1.61	—1.9	—0.95
Cephalic Index	79.3	1.4	0.4	—1.34	—0.70	—1.00	—2.04	—1.7	—1.24
Face Height	125.3	1.4	1.5	1.6	2.43	—0.10	2.42	1.6	—0.02
Face Breadth	149.6	—0.1	—2.3	—0.3	—1.23	—1.80	—2.55	—3.9	—1.85
Facial Index	83.8	1.1	2.9	1.12	2.30	1.03	2.14	3.2	1.49
Cephalo-Facial Index	97.6	—1.5	—2.0	0.55	0.30	—0.13	—0.31	—1.6	—1.04
Stature	166.4	—4.0	—3.1	—1.0	....	....	....	—1.8	9.00
Average Differences		1.50	1.59	1.15	1.44	0.94	1.90	2.24	2.29"

9: Seltzer--358-362 (no date) 1933 Copper Eskimo-1-6
116, 144, 174

"The present Central Eskimos, extending from Coronation Gulf to Baffin Land and Labrador, are the representatives of the modern Eschato-Eskimo culture. It is a commonly accepted proposition that this culture is later than that of the Thule, and that it appeared in its existing position only after the decline of the Thule Eskimos.

In support of this thesis, Mathiassen, Birket-Smith, Boas, Jenness and others have shown that in comparatively recent times there has been [359] a new advance of inland tribes from the region west of Hudson Bay to the Central Eskimo lands. This migration is supposed to have imposed upon the scattered remnants of the Old Thulers the new Eschato culture. Birket-Smith (23) has proven that the Caribou Eskimo have in historic

23. Birket-Smith, 1929.

times arrived at the Barren Grounds from inland regions, when the Chipewyan Indians retreated to the south. Jenness (24) came to the conclusion that the Copper Eskimos

24. Jenness, 1923 b.

were originally an inland people who have reached their present position within the last few hundred years.

Practically all of these hypotheses are based upon archeological and cultural data. The task for the physical anthropologist is to determine on the basis of somatological evidence, whether associated with this new advance of Eschato Culture, there has been a regular migration of new peoples or just an infiltration of cultural elements.

To Dr. H.L. Shapiro (25) must be given the credit for establishing for the first time

25. Shapiro, 1931.

a physical relationship between an interior Indian tribe and certain Eskimo groups. He sees close resemblances in physical features between the Chipewyan Indians on the one hand, and the Smith Sound, Coronation Gulf, and Seward Peninsula Eskimos on the other. In conclusion, Shaprio postulates that these Eskimos 'are derived from an Indian stock which migrated northward to the coast and then moved northeastward to Smith Sound and westward to Seward Peninsula.'

In Table 30, I have contrasted the pure Chipewyan Indian series measured by Grant with several Eskimo groups. An examination of the measurements and indices supports Shapiro's contention of a close physical relationship between the Chipewyan Indians and Seward Peninsula Eskimos, and, in my opinion, a more minute study would extend this relationship to include several other western Alaskan coast Eskimos, the Kotzebue Sound, St. Lawrence Island and Southwest Alaskans.

We can hardly question the striking likeness the Chipewyan Indians show with the Copper Eskimos. Yet, I feel that some distinction should be made between the Copper Eskimos of Coronation Gulf and those of Victoria Island. From the limited measurements we have, there is no doubt that the Victoria Island group is physically almost inseparable from the pure Chipewyan, the average differences between the means being only 0.94. On the other hand, the Coronation Gulf Eskimos [p. 360 contains a chart] [361] measured by Stefansson (26) and Jenness vary considerably from the Chipewyan,

26. This paper.

with average differences for the Stefansson series of 1.90 and 2.24 for those of Jenness. (27)

27. In comparing my Coronation Gulf Eskimos with those of Jenness it should be noted that under this heading Jenness has included 7 individuals from Prince Albert Sound and 34 from the southwest corner of Victoria Island, so that exactly half of Jenness' Coronation Gulf Eskimos would be according to my classification Victoria Islanders.

The Coronation Gulf and Victoria Island Eskimos are fundamentally one and the same

group of people with more or less identical culture, therefore, it is most probable that this physical difference between them can be accounted for on the basis of the greater assimilation by the Coronation Gulfers of a different racial strain. I maintain that this foreign blood was that of the Old Thulers.

It seems clear that when the Coronation Gulf Eskimos arrived at their present geographical position, they found some scattered remnants of the bearers of the Old Thule culture and it was with these Eskimos that they mixed. Although the Thulers were in all likelihood not very numerous, enough were absorbed to cause a change in the physical type of the invading group. The Victoria Island Eskimos retained more of their original physical characteristics, as shown by their shorter and wider heads and higher cephalic indices, because on entering their district they did not encounter as many of the older Thule inhabitants as did their more southern relatives. This theory is substantiated by the fact that archeologists have found more abundant Thule remains in the Coronation Gulf region than along the shores of Prince Albert Sound and Minto Inlet in Victoria Island.

In respect to the Smith Sound-Chipewyan relationship, the situation is not very clear. We are faced with an obstacle of generalizing from a series of 8 individuals. The average difference between their means has been calculated to be 2.29. This is not a small average difference, but still not excessively large. The difficulty arises in reconciling the exceedingly small stature of the Smith Sound Eskimos (157.4 cm.)

with the much taller Chipewyans who have a mean of 166.4 cm. This great stature difference of 9 cm., in my opinion, is sufficient grounds for calling in question the Chipewyan origin of the Smith Sound Eskimo.

On the other hand, it may be possible that the physical status of the Smith Sound group revolves about the historical migration of some [362] Pond's Inlet Eskimos into Smith Sound. The result of this new element was that the people measured by Steensby were a mixture of the indigenous population and the immigrants from the southwest.

Steensby (28) in describing these people writes: 'Those I met were on the whole small,

28. Steensby, 1910.

but there are not a few in the tribe who are above the average height. It is said that those who are descended from the Pond's Inlet Eskimos belong to the tallest in the tribe.'

This goes to prove that although the invaders were few in number, they undoubtedly altered to some extent the physical constitution of the residing group. Who the indigenous population of Smith Sound were, is a question which I shall discuss soon. Let it suffice for the present to state that unquestionably they were of very small stature.

To summarize the influence of the Athapaskans of Chipewyan stock we may conclude that:

9: Seltzer--358-362 (no date) 1933 Copper Eskimo-6
116, 144, 174

(1) The present inhabitants of the western coast of Alaska as far north as Point Hope, are the descendants of an invasion of people resembling the Athapaskans of Chipewyan stock. In this group we have the Eskimos from Kotzebue Sound, Seward Peninsula, St. Lawrence Island and Southwest Alaska.

(2) The Copper Eskimos are also related to the Athapaskan Chipewyans. The Coronation Gulfers are a mixture of the new invaders and the Old Thulers who still survived in that locality, while the Victoria Islanders retained their purity because of their being more or less out of the range of the Thule culture peoples.

(3) The Smith Sound Eskimos may be said to be very indirectly related to the Athapaskan Chipewyans, and that only if we infer that the Pond's Inlet immigrants were of Chipewyan-Eschato origin."

9: Seltzer--362-367 (no date) 1933 Copper Eskimo-1-7
116, 144, 174

"Another great division of the Eschato-Eskimo cultural advance is that participated in by the Central Eskimos in the region of Hudson Bay, including the intensively studied Caribou Eskimo, Netsilik and Iglulik groups.

In reference to the historical occupation by the Caribou Eskimo of their present territory, Birket-Smith (29) relates how the comparatively recent expansion of the

29. Birket-Smith, 1929.

Chipewyan Indians into the southern part of [363] the Barren Grounds exterminated 'an old offshoot of the Old Thule Culture.' The stimulus to this advance of the Athapaskans he charges to the introduction of firearms. The same authority also maintains that when the Chipewyans retired to the timber line, on the cessation of the pressure of the Crees from the south, the Caribou Eskimo took possession of the Barren Lands now left empty by the Chipewyans.

In addition, on purely cultural evidence, Birket-Smith (29) has propounded the theory that the present Caribou Eskimos are the last survivors of the Proto-Eskimo, a part of whom ventured to the coast in the region of Coronation Gulf and Bathurst Inlet, developed the Palae-Eskimo culture, and then spread eastward and westward along the coast.

There are two possibilities: (1) either we must accept Birket-Smith's point of view

that the Caribou Eskimos are a very ancient group of survivors of the Proto-Eskimos, (2) or the Caribou Eskimos are not survivors of the Proto-Eskimo but are a new inland group which has come down to the coast as part of the late Eschato advance.

But before we consider this question let us determine the physical status of the Caribou Eskimo and demonstrate his affiliations.

In any event, whether or not Birket-Smith is right, one would expect to find on the basis of their inland origin, that the Hudson Bay Eskimos resemble an Indian stock physically. Fortunately, in the preliminary reports of the Fifth Thule Expedition. (30)

30. Birket-Smith, 1925.

there has been published a summary of a few of the measurements taken on Hudson Bay Eskimos. In Table 31 I have contrasted this series with a group of Algonkian Cree Indians measured by Grant at Fort Chipewyan.

The results are truly startling, for we do not find any large variations between any of the measurements or indices. Disregarding signs, the average difference is but 0.59. Both the Cree and the Hudson Bay Eskimos are characterized by mesocephaly tending towards dolichocephaly, fairly short and narrow faces and short stature. We cannot escape the conclusion that the Cree Indians and the Hudson Bay Eskimos are physically identical.

In addition, from the cultural point of view, the relation of the Caribou Eskimos to an Indian stock has been fully discussed by Birket-Smith, who derives most of the Indian cultural influences from the Algonkian Cree Indians. He says: (31)

31. Birket-Smith, 1929.

[364] In now concluding the reference to the Indian elements in the culture of the Caribou Eskimos, there is reason for emphasizing once more, that in those cases where it was possible to trace them back to a particular tribe, it was to the Cree and not to the Chipewyan. (32) This quite conforms to the historical facts, as the

32. His italics, not mine.

connection with the latter is scarcely 200 years old, whereas the intercourse with the Cree, now practically at an end, is much older.

Thus on the basis of both physical and cultural grounds, the Caribou Eskimos are unquestionably related to the Cree Indians.

9: Seltzer--362-367 (no date) 1933 Copper Eskimo-4
116, 144, 174

The Caribou or Hudson Bay Eskimos do not possess, as regards physical make-up particular features which distinguish them from all of the other Eskimos and mark them out as being a separate and distinct type. On the contrary, they are but a single group of a certain type of Eskimo that is characterized by short stature, dolichocephaly bordering on mesocephaly, and fairly short and narrow faces. It is interesting to note at this point that they differ from those Eskimos related to the Athapaskan Chipewyans in having a much shorter stature, narrower head, slightly shorter heads, much narrower faces as well as shorter faces.

A survey of the existing Eskimo tribes shows that this type to which the Caribou Eskimos belong is also exemplified by the Labrador and Angmassalik Eskimos of East Greenland. In Table 32 I have tabulated the measurements and indices for these groups, and, although the Angmassalik series is not complete, lacking face height and facial index, it can be seen that they exhibit such close similarities to the others as to make the Hudson Bay, Labrador and Angmassalik Eskimos divisions of the same racial type.

Furthermore, an examination of the crania and long bones of the eastern Eskimo leads me to believe that before the inception of foreign white influence, that part of the Arctic from Hudson Bay to the east coast of Greenland was populated by this short-statured, almost mesocephalic, narrow-faced group.

We must not lose sight of the fact that this type was not the original Eskimo in these parts, but came later than the Thulers. In many localities these invaders encountered

scattered bands of the Old Thulers, some of whom were exterminated and others absorbed. This succession of the Thulers by the short-statured type is substantiated by numerous Tunit or Tornit legends, (33) which relate how the ancestors of the present

33. Hawkes, 1916.

[p. 365 contains a chart] [366] central and eastern Eskimos met and lived with a very tall statured Eskimo (Thulers), who were finally assimilated or destroyed.

I have shown, on the basis of somatological criteria, that the Hudson Bay Eskimos are undeniably related to a particular group of Cree Indians. I have also pointed out how the Hudson Bay, Labrador and Angmassalik Eskimos all belong to a single physical type. It follows, therefore, that this short-statured type of which the Hudson Bay tribes are members, is also closely affiliated with the Cree.

To emphasize this relationship, in Table 32, I have computed the average differences between the measurements and indices of the groups in question and the Algonkian Cree Indians studied at Fort Chipewyan. These differences are really so small as to warrant the presumption of close affinities with the Cree, and the conclusion that the short-statured dolichocephalic (almost mesocephalic) type, which spread over the whole eastern Arctic, was originally derived from an Indian stock resembling the Algonkian Cree.

If we now consider the question of the aboriginal population of Smith Sound we find more evidence available. From Steensby's data and from a study of the raw measurements of Bessel's unsexed crania, it seems most likely, that before the arrival of the Pond's Inlet immigrants the Smith Sounders were also of this short-statured dolicho type described above. The effect of the Pond's Inlet Eskimos was to increase the cranial and facial diameters of the original Smith Sound group. However, we cannot be absolutely certain of these facts until Bessel's series is sexed and re-examined.

In Greenland today, both the east and west coasts are racially so mixed that very few pure Eskimos are to be found. There is no doubt in my mind that the bearers of the Thule Culture arrived here, but not in any great numbers. The Eskimos who have maintained their purity up to the present, are usually of the short-statured dolicho group. Occasionally, we find among them a few tall individuals, who are probably descendants of the Old Thulers. We must also remember that Danish, Norwegian, German and other mixtures have been going on for many years. This white blood is altering the physical characteristics of the Greenland Eskimos who are beginning to evince taller statures, broader heads, much narrower and longer faces, with consequently low cephalo-facial indices.

If we return to the question of the Proto-Eskimo origin of the Caribou Eskimos as expounded by Birket-Smith, we find that on the [367] basis of physical evidence the

9: Seltzer--362-367 (no date) 1933 Copper Eskimo-7
116, 144, 174

Caribou Eskimos are related to the Algonkians of Cree stock. It has also been demonstrated that the Labrador and Angmassalik tribes are also affiliated with the same Indian group. It follows, therefore, that if we assume the Caribou Eskimo to be of Proto-Eskimo origin, then the Labrador and Angmassalik groups must have originated from the same stock. But since it is a well established fact that archaeologically the Thule Culture is the oldest in the eastern and central regions, the other cultures being superimposed upon it, then it would seem more probable that the Caribou Eskimo are not survivors of the Proto-Eskimo but rather a division of the late advance of the Eschato culture."

9: Seltzer--365 (no date) 1933 Copper Eskimo
116, 141, 144, 174

"TABLE 31

Comparison Between Means of Cree Indians at Fort Chipewyan and Hudson Bay Males

	CREE (Grant)	HUDSON BAY (Birket-Smith)	Diff.	
Head Length.....	193.2	193.7	0.5	
Head Breadth.....	150.0	149.7	—0.3	
Cephalic Index.....	77.6	77.3	—0.3	
Face Height.....	124.6	123.5	—1.1	Average
Face Breadth.....	144.6	143.4	—1.2	difference
Facial Index.....	86.1	86.0	—0.1	0.59
Cephalo-Facial Index....	96.6	95.8	—0.8	
Stature.....	161.0	160.6	— 0.4"	

9: Seltzer--367-368 (no date) 1933 Copper Eskimo-1-2
116, 174

"Throughout this discussion I have been fully aware of the fact that in certain places, the available material was of a scanty and meagre nature. Nevertheless, important evidence has appeared, which throws light upon the question of the immediate origin of the Eskimo and has produced definite indications as to the association of physical types with cultural radiations. Most anthropologists agree with Dr. Hrdlička on the problem of the ultimate origin of the Eskimo placing the genesis of this group somewhere in the Asiatic continent where it became differentiated as a limb of the great Mongoloid division of mankind. However, it is the question of the local or immediate home of the Eskimo which has raised tremendous controversy and which has produced two schools of thought. The first group would place the immediate origin of the Eskimo in the region of Alaska, from which point they are supposed to have spread eastwards along the Arctic coasts into Greenland. The second school contends that the immediate origin of the Eskimo should be placed somewhere in the Central Hudson Bay region, originally inland, but finally following the rivers to the coast and then migrating westward to Alaska and eastward to Labrador and Greenland.

According to the results of this monograph, both of these previously irreconcilable views may now be brought en rapport to form a new and complete picture as follows:

Two distinct cultures, the Thule originating from the Alaskan region, and the Eschato from the Central region, one superimposed upon the other, and identified with distinct

physical types may be clearly discerned from the mass of data. [368]

It appears that the earlier Thule Culture was carried by a very tall, extremely dolichocephalic, hypsicephalic Eskimo group whose home was somewhere in the west. These people, with whaling as their main cultural background, spread over the whole Arctic from Alaska to Greenland. The Mackenzie Eskimo, east of the Mackenzie River delta, represent their only approximately pure living descendants."

9: Seltzer--368 (no date) 1933 Copper Eskimo
116, 144, 174

"At a much later period [MPK: following the Thule Culture] allied with the Eschato Culture advance, there was a sudden Indianoid expansion from central Canada from about the region of Lake Athabaska. From this focus these migrations into the Eskimo regions, replacing and superimposing upon the earlier Thulers, emanated from two distinct sources. One group was derived from people of Athapaskan stock as represented by the modern Chipewyans, characterized by moderate height, mesocephaly, wide heads and fairly long and broad faces; the other was of Algonkian origin, as represented by the Cree, showing very short stature, dolichocephaly bordering on mesocephaly, quite short and narrow faces, with low cephalo-facial indices.

The 'Athapaskan Chipewyan' group traveled to the north and west, the western division occupying the region of Kotzebue Sound, Seward Peninsula and St. Lawrence Island, while the northern division, represented by the Copper Eskimos, migrated to the region of Coronation Gulf and Victoria Island.

The 'Algonkian Cree' stock sent their numbers to the north and east in successive waves of migration. The first group occupied the whole territory of Hudson Bay, Labrador, Baffin Land and Greenland, supplanting still existing bands of Old Thulers. The second group, represented by the present Caribou Eskimo, at a later period invaded the Barren Grounds where they are to be found today."

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